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The Response of Tumors to Radiation*

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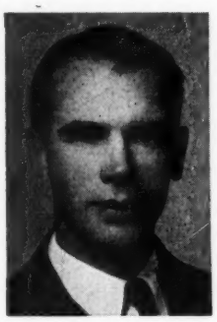

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The response of tumors to radiation is based on the sensitivity of the type cell, the character of the supporting tissues, and the effect on the normal tissues of the host. Depending on their response to radiation tumors may be classed as radio-sensitive, radio-responsive, and radio-resistant. Radio-resistance may be acquired following radiation therapy.

The tissue reactions for a given dose are fairly constant and characteristic regardless of minor variations in wave length. Recently irradiated tissue is very susceptible to infection.

■ WHILE there are wide variations in the response of individual tumors, certain general principles have been established that permit some degree of prognostication of therapeutic effect.

First, there is no significant, if any, variation of response of tumors to therapeutic radiation within the range of wave lengths ordinarily used. Even pure beta radiation, such as that obtained from radioactive phosphorus, has a similar qualitative effect on tissues to that of x-rays or radium. Because of the greater local absorption, beta radiation does have a more marked necrotizing effect. All these forms of radiation have an ionizing effect upon the cell.

Second, the amount of radiation delivered to the tumor and the time intervals at which the dosage is received are important factors in determining the response.

Third, the effective dose of radiation exerted on a tumor in the organism is fortunately at an appreciably lower level than that exerted on tumor cells of similar type *in vitro*. This is dependent in large part on the response of the stroma of the tumor to radiation.

Fourth, tumor cells may be ranged in sensitivity to radiation according to their embryonic origin and the degree of differentiation to which they have attained. In general, the less highly specialized tissues and the less differentiated cells are the more susceptible to radiation. However, this is subject to just enough variation so that we have to rely in large part on an empirical basis for determining radiosensitivity.

It might be well to define our terms before going further. Those tumors are considered radiosensitive which show appreciable regression or disappearance when treated with an amount of radiation equivalent to 2500 r of 200 kv. x-ray delivered in the usual divided doses. Tumors may be considered radioresponsive when regression or disappearance is obtained in the range between 2500 r and 5000 r, and they are considered radioresistant when a dosage above 5000 r is required. These limits have been selected because in the majority of persons 2500 r given in divided doses will not produce appreciable permanent change in normal tissues; whereas in the range up to 5000 r, some change will be produced, and in the range above 5000 r permanent damage will be done to normal tissues in the field of radiation that may even exceed the damage to the tumor cells themselves.

The response of the tumor is conditioned primarily by the reaction of the neoplastic cells to

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radiation, but this is modified by other circumstances among which are: first, the character of the stroma; second, the vascular supply; third, the presence or absence of infection.

If one takes as an example of a radioresponsive tumor a basal cell carcinoma of the cheek, which will often show satisfactory regression with 4000 r, one has a well-vascularized bed made up of connective tissue or muscle and usually no infection. In contrast to this, a basal cell tumor of the forehead which has eroded the frontal bone and possibly permitted the development of a mild osteomyelitis responds very poorly to the same amount of radiation because of the poorly vascularized, relatively inert supporting tissue and the occurrence of concomitant local sepsis.

Changes After Radiation

When one follows through the changes that take place in a tumor and its stroma, the reason for the modification of the effect by environmental factors may be readily seen. The immediate effect of radiation on the tumor cells is an arrest of mitosis. This may appear within an hour and usually persists for eighteen to twenty-four hours. This is accompanied by varying degrees of necrosis and degeneration of the irradiated tumor cells ranging from vacuolization, swelling of the mitochondria, and disintegration of the Golgi apparatus to complete necrosis with or without polymorphonuclear infiltration. As delayed effects one may find that chromosomal abnormalities established by sublethal injury may lead to death of daughter cells several generations following the initial irradiation.

The stromal changes may be divided into two parts; those that occur in connective tissues and those that occur in blood vessels.

In connective tissues the initial change is a swelling of the collagen fibers with some local edema and degenerative changes in the fibroblasts that may progress to actual necrosis. With the passage of time the collagen becomes hyalinized and dense so that a fairly effective barrier is formed that may hinder the spread of the tumor on the one hand or hamper its supply of nutrition on the other. The dense hyaline scars resulting from this alteration of collagen persist for years without appreciable retraction. The smoothness and flatness of radiation scars are quite a contrast to the contraction from the scar of a burn from boiling water or from the passage of an electric current. In this connection, it is important to remember that the eradication of a tumor by means of radiation may require the production of a marked inflammatory response or ulceration, all too often mistakenly regarded by the layman as evidence of poor therapy.

The changes in the blood vessels are at first dilatation followed in a few hours or days by a diapedesis of red cells with local edema and congestion. This usually parallels the height of the cutaneous reaction. Some of the smaller vessels may show actual thrombosis and subsequent occlusion through organization, whereas others will show marked endothelial proliferation with resultant narrowing of the lumen. After some weeks have elapsed the late vascular changes become even more marked. The endothelial proliferation may continue. Fibrosis and hyalinization of collagen of the subintima and in the media may occur, as well as degeneration of the elastic coats and the elastic tissue of the intima. These vascular changes are not restricted to the arteries, but also involve the veins, many of the capillaries, and the more intense fields of radiation are thrombosed and obliterated. Other vessels, sometimes very late, undergo ectasia giving the dilated vascular channels, the irregularly coursing telangiectases, that are so characteristic a feature of the late radiation change in the skin. These vascular changes inevitably result in impaired nutrition of the tumor with consequent delay in its growth rate or hindrance to its survival.

Radiation reaction in any tumor hinges on these three component factors: changes in the cells themselves, changes in the connective tissue, and changes in the blood vessels so that the ultimate response, no matter how varied it may appear grossly, is based on the same component factors.

Limitations to Radiation Therapy

There are certain obvious limitations to radiation therapy just as there are to the surgical treatment of tumors. It is important not to confuse a radiosensitive tumor with a radiocurable tumor. Obviously, if metastasis or extension of the tumor has occurred beyond the field of radiation, cure of even the most sensitive tumor will not be obtained. The normal tissues of some individuals may prove unexpectedly sensitive to

radiation so that more extensive radiation burns will be produced than is usual, giving added discomfort to the patient. Sometimes, unfortunately, tumors which are initially radioresponsive may become resistant, probably through the killing of the more sensitive cells and thus obtaining a selection of the more resistant cells.

As an example of a radiosensitive tumor let us take a lymphosarcoma, where, with a relatively light dose of radiation, complete and dramatic shrinkage of the tumor will occur, although recurrence is apt to develop. The lymphocyte is among the most susceptible of all cells in the body and the tumors derived from it are correspondingly susceptible. Death of lymphocytes may occur in a few hours after a dose of less than 200 r. Nevertheless, after a few months have gone by the tumor recurs and not only grows with all its initial vigor, but fails to regress with a dosage previously effective.

In general, the connective tissue tumors are resistant to radiation, although it is possible to find isolated examples showing the contrary. Thus, a fibrosarcoma is an extremely resistant tumor and rarely, if ever, shows appreciable regression.

The carcinoma of the breast may be classified as a resistant tumor. The chief field for radiation here I believe to be the control of postoperative recurrences and the treatment of metastases. The primary tumor itself as well as the axillary metastases are usually resistant to radiation, and while cures may occasionally be obtained with the use of radium needles or intensive x-ray radiation, better results may be obtained with less pain and disability to the patient by the surgical approach, provided operation is possible.

Still another contrast is afforded by contrasting tumors in the same tissue, as the radiosensitive Ewing's tumor of bone and the highly resistant osteogenic sarcoma.

Judging by the developments of the past two decades, as the experience in radiation therapy increases, and as technical improvements become available, now confusing discrepancies in response will undoubtedly be cleared up, and the therapeutic results will be much more encouraging than those of today.

MSMS

Child Guidance Program of the Michigan Hospital Commission

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■ ONE of the duties of the Michigan State Hospital Commission as defined by statute is to "Develop and constitute a state wide mental hygiene program with emphasis on the promotion of mental health . . ."

At the last regular session of the Legislature sufficient funds were appropriated to initiate such a program by the establishment of three resident child guidance clinics. Each clinic will serve a territory within a radius of sixty miles.

Interested communities were invited to make application for the service by demonstrating adequate community readiness and sufficient resources to insure a well prepared and stable center from which to operate. In addition they were expected to provide suitable quarters, supplies and salary of the receptionist-stenographer. The Commission is responsible for the salaries of the professional staff and through its Director of Mental Hygiene, general supervision and direction.

Units are now in process of organization at Kalamazoo, Muskegon and Saginaw. A similar clinic has been in operation at Lansing since 1938 and was made possible by a grant to the Commission from the Michigan Children's Fund and contributions from the community. The general direction and operation of this center is the responsibility of the Commission and will now operate in the same manner as the new units. Plans call for the establishment of units in other areas when additional appropriations are made available.

The professional staff consists of a child psychiatrist, psychiatric social worker and psychologist. They function by bringing to bear on each case their separate skills and at a subsequent conference all the information so obtained is

pooled and the proper handling of the problem thus determined.

The most numerous referrals come from physicians, probate judges, school personnel, case work agencies and parents. The following list of complaints taken from a clinic journal are typical of those presented for study:

"Nervousness"	Chronic quarrelsomeness
Enuresis	Feeding difficulties
Sleep disturbances	Neurological consultation
Tics and habit spasms	Thumb sucking and nail biting
Obsessions and compulsions	Convulsions
Excessive shyness and whining	Fears
Anxieties	Excessive day dreaming
Chronic disobedience	Temper tantrums
Speech problem	Over-activity
Unsubstantiated complaints of illness	Sex difficulty
Subject difficulties	Restlessness
Lying	Emotional instability
Transfer from broken home	Misbehavior in school
	Stealing
	Truancy

The several types of service offered by the clinics are detailed below:

1. *Consultative.*—A consultation is held between the conferring agency, such as the physician or social worker and the clinic staff. From the facts supplied suggestions are made for treatment of the patient which is carried out by the individual or agency requesting advice.

2. *Diagnostic.*—When the service is diagnostic in scope the child is brought for study by the professional staff of the clinic. At a subsequent conference, a treatment program is decided upon which is carried out by the referral agency under the guidance of the clinic staff.

3. *Therapeutic.*—This service is provided for patients who require highly specialized and lengthy therapy. In this situation the clinic assumes the responsibility for the complete treatment for as long as may be necessary.

It must be emphasized that it is rarely possible to decide which of the aforementioned services should be outlined until preliminary study is complete. Thus consultation may lead to diagnostic study, the result of which may in turn indicate the need of full and prolonged psychotherapy at the clinic.

Physical problems are not dealt with at the clinic but are referred to the family physician for attention. When indicated, a neurological examination is made and if a treatable condition is discovered, it too is referred.

In dealing with the problem, either direct or indirect psychotherapy may be used. Indirect therapy seeks results by manipulation of the material and environmental factors and by reorientation of the destructive emotional attitudes involved. The direct approach places therapeutic emphasis upon the child himself and usually involves a long period of frequent treatment visits to the clinic. However, since behavior is a result of an individual's attempt to adjust his inner drives to the restraining forces of his environment, it is obvious that all therapy must consider the setting in which the problem has developed. Thus the successful handling of any case requires attention to such social units as the home, school and community.

Included among the various functions of the clinic is the extremely important one of community education, interpretation and integration. The highly desirable goal to be reached is a community sensitive to the emotional needs of children and an awareness of the importance to the individual and to the nation, of providing for them an environment which is conducive to growth towards emotional and intellectual maturity. The clinic personnel, therefore, in working with a case, attempts to coöperate as closely as possible with all agencies dealing with children. The staff, and in particular the clinic director, is willing to address any group who wishes to avail themselves of this service.

An organized part of this general program is to offer training courses to guidance counselors, teachers, social workers and other interested groups. It is expected that these facilities will be available in the near future for social workers and psychologists who wish prolonged training in this specialized field. In addition to this full-time training program any local physician especially interested in child guidance is welcome to work in the clinic under the guidance of its director for a specified time each week.

The following policies adopted by the State Hospital Commission with respect to the operation of Child Guidance Clinics, are of general interest to the medical profession and therefore appended:

"No child guidance clinic shall be authorized to charge fees for service but gifts may be accepted in

the name of the Hospital Commission to be used for the furtherance of the program of the clinic for which the gift was designated.

The directors of any child guidance clinic operated by the Hospital Commission shall not at any time engage in private practice, either consultative or general."

An attempt has been made, through this short statement, to describe a part of the Commission's mental hygiene program; to discuss the organization of the clinics; to indicate the kinds of cases admitted and the various types of services offered.

It is hoped that the profession will utilize not only the clinical services available but will associate itself as closely as possible with the activities of the clinic. Physicians are cordially invited to visit the center at any time and to join in case conferences whenever their schedule allows.

MSMS

Nodular Symmetrical Lipomatosis*

Review of Literature and Report of a Case*

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A SIMPLE lipoma which can so easily be cured by surgery is usually removed without much thought being given to its etiology. In cases of multiple tumors, however, the questions of etiology and other possible forms of treatment arise, for removal of these tumors is undesirable.

Etiology

Strangely enough, although there has been much speculation and many theories advanced concerning these tumors since Dercum[4] in 1892 published his classical description of massive painful lipomata, the etiology of all forms of lipomata is still obscure. Numerous early theories were advanced without much basis, among which were those of a dysfunction of the mesencephalon and the diencephalon, and a dysfunction of the pineal gland or subthalamic region, or both. Lyon,[9] in 1910, after an extensive review of the literature, concluded that all forms of lipomata are variants of the same condition and are due to "metabolic changes."

The theory of an endocrine imbalance has, of course, been advanced by numerous workers. Both the thyroid and the pituitary have been presented as factors, the former due to its frequent enlargement in cases of adiposis dolorosa and the latter due to its known function in fat metabolism. Neither of these theories seems to be supported by facts or later studies.

The embryonic theory has been supported by Shaw,[14] Hatai,[5] Binnot,[3] and others, who report finding adipose cellular colonies in human embryos in the axilla, in the proximity of the pleura, in the intrascapular and suprascapular regions, in the neck, in the breasts, in the peritoneal tissue, and in the anterior abdominal wall.

The hereditary or familial theory has been supported by various writers.[6,7,8,10] Adair, Pack and Farrior[1] classified the multiple lipomas into two groups, one of which they state is confined to one or two limbs, is usually associated with enlargement of the muscles and bones of the same limb, and is congenital; the other, however, they regard as neurolipomas and of neurogenic rather than of congenital origin, since they develop in later life. The neurogenic origin of lipomas has been suggested by various other writers, due chiefly to the usual symmetrical distribution of these tumors and their predominance along the course of the cutaneous nerves.

Barber[2] in 1940 reviewed the literature and reported three cases of symmetrical nodular lipomatosis. From these cases he concluded that there are two forms of nodular circumscribed lipomatosis—an acquired form appearing about the menopause accompanied by considerable pain, and a hereditary and familial form, which is painless.

A nervous factor has been presented as a possibility in the etiology by numerous writers. Others have suggested a relationship between

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rheumatic fever and lipomatosis. A syphilitic factor has even been considered. Some writers have reported a frequent association of large pigmented nevi with lipomatosis. Local tissue irritation either by infection or trauma, or both, has been presented as stimulating the excessive deposition of fat to form a tumor. Peacock[11] states that lipomatosis is a disease only of the degenerative period of life and attributes it to catabolic processes.

The following case of nodular symmetrical lipomatosis is presented both because of its comparative rarity and because it presents several features of interest in common with other cases of this type.

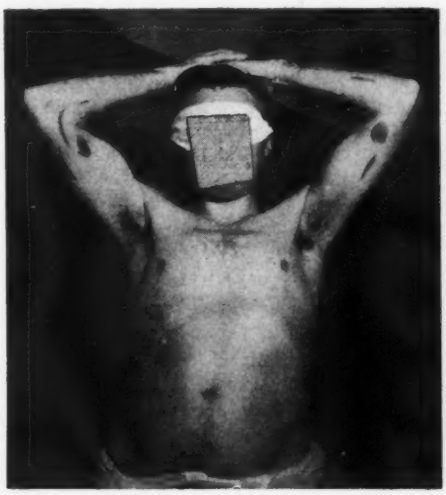

Fig. 1

Fig. 2

Fig. 1. Fig. 2. Linear marks denote scars of previously removed tumors; oval areas indicate the tumors now present.

Case Study

Mr. F. B., white, male, aged forty-seven, office worker, was referred to us, complaining of a lump on his right leg which he had noticed for five years, and lumps on both arms which he had noticed for three years. These had grown slowly and had never been painful or tender. The past history was not remarkable except for a "nervous temperament" all his life. He gave a history of "spells," characterized by first a generalized headache, then a pounding in the neck moving down later over the precordium, and then a "burning and numbness" in his left arm. His left arm at times would "pull" itself backward, and he would lose control of it. Massage would relieve this. These "spells" always came on after lunch and occurred at intervals of one week to three months. There was no history of rheumatic fever, precordial pain, palpitation, cyanosis, or edema. He had had frequent attacks of tonsillitis and quinsy until tonsillectomy three years ago. There was no family history of similar tumors. His father had died with a ruptured appendix at age 65, but his mother, two brothers, three sisters, and two sons were all living and well and there was no family history of cancer, tuberculosis, diabetes, kidney or heart disease.

Physical Examination

Physical examination revealed a soft, non-tender tumor mass about 3 cm. in diameter on the anterior aspect of the upper right thigh and four more smaller ones on the arms, three on the medial aspect of the right arm about 10 cm. above the medial epicondyle, and one on the medial aspect of the left arm, about 10 cm. above the medial epicondyle. These were all firm, round, smooth, unilobular, non-tender, and were attached to the deeper structures but not to the skin. There was a slight bluish tint to the skin over the tumors. There were three large pigmented nevi in the left axilla and one large nevus and seven or eight small ones in the posterior thoracic and lumbar regions. The thyroid was not palpable. The throat was not injected. The heart was of normal size, rhythm, and sounds. The lungs were clear to percussion and auscultation. The abdomen was not rigid or tender, and there were no palpable masses. His height was 69½ inches and his weight 162 pounds. The rest of the physical examination was not important. Blood counts were within normal limits, the urine was negative, and the Wassermann reaction was negative.

Treatment and Findings

On August 19, 1941, under local infiltration of novocaine anesthesia the above mentioned tumors were removed. They were all found to be circumscribed and encapsulated and they ranged in size from 2 to 4 cm. in diameter. Pathological examination was done by Dr. W. P. L. McBride and the diagnosis of each specimen was lipoma.

On August 23, 1941, two similar tumors were removed from the medial surface of the left forearm.

They had evidently been present at the time of the first operation, but were small and were not noticed until several days after the first operation.

On September 19, 1941, five similar tumors were removed—one from the anterior aspect of the left leg 20 cm. above the knee, one from the posterior surface of the right leg, about 6 cm. above the knee, one from the medial surface of the right forearm just below the elbow and two from the medial surface of the right arm, just above the sites of the previously removed tumors.

On November 11, 1941, he was called back into the office for a complete check-up. At that time he had three more small tumors which he had noticed about a month—one on the antero-lateral surface of the left leg in its upper third, one on the medial surface of the right arm just above the elbow, and one on the medial surface of the left arm just above the elbow.

Laboratory data at that time showed a R.B.C. of 4,460,000, hemoglobin 13.2 gms., W.B.C. 6,800, and differential of 66 per cent polys, of which 3 per cent were non-segmented, 32 per cent lymphocytes and 2 per cent monocytes. The B.M.R. was plus 11 per cent. The sedimentation rate was 3 mm. in one hour. The Wassermann reaction was negative. Skull plates showed a normal sella turcica. Roentgenograms of the long bones of the arms showed no evidence of pathology. Blood chemistry showed calcium to be 14.1 mgm. per cent on one occasion and 11 mgm. per cent on another, phosphorus 3.4 mgm. per cent, and cholesterol 229.6 mgm. per cent on one occasion and 190.4 mgm. per cent on another.

The patient was last seen a few days ago, at which time he had developed another small lipoma in the left buttocks. Photographs were made (Figs. 1 and 2).

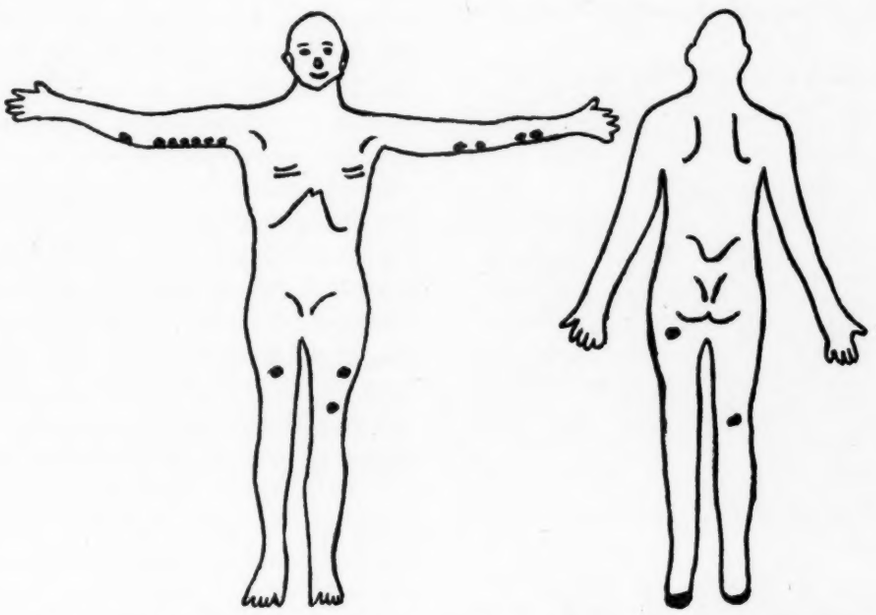

Fig. 3. Drawing showing the remarkable symmetry of these tumors and their predominance on the flexor surface.

Discussion

Although these tumors have been found in all parts of the body they predominate on the flexor surface of the arms, the neck, the upper legs, the gluteal region, and the trunk supplied by the cutaneous branches of the intercostal nerves. The most frequent locations are the upper arms and thighs. They are usually symmetrical, in some cases rigorously so.

Our case presented sixteen tumors, all of which were located on the flexor surfaces of the extremities, except for one on the posterior surface of the right thigh and one in the subcutaneous tissue of the left buttocks. (Fig. 2.) They all developed in the fifth decade. The distribution was partly symmetrical and became more so with the evolution of the disease and the appearance of more tumors. The tumors were never painful or tender. They were all nodular and circumscribed.

The patient presented no evidence of endocrine imbalance. The B.M.R. was within normal range, and skull plates showed no evidence of pituitary pathology. His muscular development was not excessive and his long bones were of normal size and length.

In this case there was no association with rheumatic fever, infection, or trauma, and no family history of similar tumors could be elicited.

As in several other reported cases, there were several large pigmented nevi associated with the tumors, these being present only in the thoracic and lumbar regions, however.

Summary

1. A case of symmetrical nodular lipomatosis is presented.

2. An extensive review of the literature regarding etiology of multiple lipomata is abstracted.

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MSMS

The Establishment of the Michigan Board of Health

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You have got your law, and I have commissioned you as members, but whether your Board will continue will depend upon the amount and kind of work you do as members of the Board.[1]

—GOV. JOHN J. BAGLEY, 1873

■ THERE were several reasons why the State Board of Health came to be established in 1873, chief among them being the activities of certain indefatigable workers living in or about the city of Lansing. Other factors which undoubtedly paved the way for this movement, and which gave the promoters many of their ideas, were the lessons in hygiene which were learned during the Civil War by the members of the Sanitary Corps of the Army.[2] The coming together of large numbers of men made sanitary discipline necessary, and also enabled the sanitary officers in charge of the work to observe the effects of such discipline. From available accounts it is learned that the results achieved by the Sanitary Corps were amazing "to an extent that could scarcely be credited except by an eye witness."[3] "My father's experience as a young medical officer in the Civil War," writes Dr. Howard B. Baker, "impressed him with certain aspects of medical organization and he visualized these as applied to the medical relations of the State. I do not know whether the idea of a Michigan State Board of Health originated with him alone or with Doctor R. C. Kedzie, or with both jointly, but those two, working through the Michigan State Medical Society, gathered sufficient support to get action in the Legislature. . . . It is evident that in order to get the Legislature to act there must have been pretty active support of the proposal, in lay circles as well as medical."[4]

Initial Effort to Establish a State Board of Health

According to MacClure, "the move for a State Board of Health would have been less vigorous had it not been that similar action had been taken in Massachusetts."[5] The State Board of Health of Massachusetts made its first annual report about January, 1870. One of those who received a copy was Dr. Henry B. Baker of Michigan, who at that time lived in Wenona, a small village outside of Lansing.[6] So impressed was Dr. Baker with the plan set forth in this report, that he immediately set about to frame a similar bill providing for a State Board of Health in Michigan.[7] In June, 1870, at the annual meeting of the State Medical Society, he read a paper openly advocating the establishment of a State Board of health in Michigan.[8]

One of Dr. Baker's first efforts to arouse the interest of others in his idea was an attempt to influence his partner in the practice of medicine, Dr. Ira H. Bartholomew.[9] But to Dr. Baker's plan Dr. Bartholomew is reputed to have said, "One man can do nothing." Dr. Baker persisted, however, until Dr. Bartholomew finally did become interested and thereafter, according to MacClure, "the movement was not confined to 'one man,' there were two men."[10]

Soon after the fall election of 1870, Dr. Baker had a conference with a newly elected senator from Lansing, Mr. I. M. Cravath.[11] The plan for a State Board of Health was revealed to the Senator and later at Dr. Baker's suggestion he introduced a bill in the legislature for the creation of one, and moreover "made it the main measure in which he was interested during the session. By individual effort with other senators and by speeches, he worked vigorously for the passage of this proposed legislation."[12]

For various reasons, however, it met with stiff opposition during the time it was being discussed by the Committee of the whole.[13] According to MacClure, "This may have been due to the presence on that committee of a dealer in drugs and patent medicines who may have thought the proposed legislation might interfere with his business."[14] Another reason which militated against its progress was the fact that, as originally drawn up, the bill would have legislated into office certain physicians named therein. Those named in the proposed measure included Doctors Robert C. Kedzie, Homer O. Hitchcock, E. W. Jenks, A. B. Palmer, I. H. Bartholomew, and H. B. Baker. This feature was strenuously objected to by the committee. In the House of Representatives it met with similar opposition.[15] Thus the first attempt to create a State Board of Health met with failure, but not for long. Events elsewhere were to give the proponents of the movement considerable assistance.

Medical Profession Sponsors State Board of Health

At the twenty-second annual meeting of the American Medical Association on May 5, 1871, Dr. T. M. Logan of California introduced the following preamble and resolution which was afterwards adopted:

WHEREAS, The science of hygiene and its corollary, preventive or State medicine, are subjects eminently congenial with the purposes of this Association, inasmuch as they have for their objects the preservation of human life, and the removal of those causes of diseases and death which it is in the power of the legislation to ameliorate, if not eradicate; And Whereas, the great fundamental idea that was made the prominent element for medical association, and that led eventually to our national organization, was a higher standard of medical education; And Whereas, the present system adopted by our Colleges provides more and more satisfactorily for the thorough qualifications of the graduate, as regards the principles and practice of his art, but does not provide at all adequately for the special study and cultivation of questions of State Medicine; therefore be it

RESOLVED, That this Association recommends a distinct and separate chair of hygiene, independent of physiology, to be established in all our medical Schools, and constitute a part of the curriculum requisite for that diploma which confers one of the highest honors of the profession.

RESOLVED, That the inauguration of the enlarged philanthropic policy whether physical, whether moral, whether born of earth, of air, or of society, which are either openly or insidiously degenerating the human race.

RESOLVED, That this Association further recommends that initiative steps be taken, as soon as six States shall engraft State medicine upon their statute books, for the formation of a "National Health Council," whose objects shall be the prosecution of the comparative study of international hygienic statistics, and the diffusion and utilizing of sanitary knowledge; and that said Council shall be aided and assisted by this Association in using whatever influence may legitimately lay in their power, with foreign States, as well as with the medical profession and the people generally, in securing of State medicine in Massachusetts and California is worthy of our special approbation, and commends itself to other States for imitation; and therefore, the President of this Association is hereby authorized to nominate at this session, a committee consisting of one physician from each State in the Union to memorialize the Legislatures of all the other States to follow the example of one of the oldest, most enlightened and conservative, as well as one of the youngest, most progressive, and enterprising members of our glorified confederacy, who have led off in the right way, and at the right time, for the prevention of disease and the correction of those multitudinous agencies, coöperation in the ends and objects of public hygiene.

RESOLVED, That said National Health Council, although thus organized as a branch *per se,* shall be auxiliary to this Association, and shall constitute a special section on hygiene, to which all questions, germane to this department of medicine, shall be referred. "Only" to use the language of the great Virchow, "by thus working harmoniously together, by thus mutually enlightening each other, will our country gain an efficient organ to which may be properly confided the solution of the great question of the day, viz.; bodily and mental health, and development of future generations."[16]

Acting on this resolution, the president of the Association, Dr. A. Stille, named a committee on a "National Health Council" to memorialize the state legislatures of all states. Dr. Alonzo B. Palmer was named to represent Michigan.[17]

The following year this committee, at a similar meeting, reported that "a form of memorial was prepared, printed, and mailed to each State, with a view of bringing about a concerted move-

ment in every State in regard to such legislative action as the subject seemed to require. While your committee are not yet able to give any definite results of their action, still we report progress, and can confidently state that, although the requisite number of States have not yet conformed to the resolutions we were appointed to carry out, nevertheless, a general interest has been awakened throughout the length and breadth of our common country, in the great questions therein involved."[18] During this meeting the name of the committee was changed from Committee on National Health Council to the Section on State Medicine and Public Hygiene.[19]

Interestingly enough, Dr. Logan of California was named president of the Association for the coming year. In his presidential address in 1873, Dr. Logan urged once again the establishment of state boards of health in all states, together with a central sanitary bureau to be established by the federal government.[20]

In the meantime the medical profession of Michigan became increasingly concerned in the movement for a state board of health in this state. Following the defeat of the original bill for the creation of a state board of health, physicians and others interested in the project wrote many editorials and short articles stressing its need in Michigan.[21] The dangers of illuminating oils and poisonous wallpapers were pointed out as reasons justifying the creation of such a board.[22] Editorials such as the following made their appearance in the medical journals of the state:

State Board of Health

We have watched with great interest the work performed by the Massachusetts Board of Health. The reports we, in common with other medical journals, have deemed of such value, as to quote from them for the benefit of our readers. They offer suggestions and furnish facts, not only for guidance in improving the health of the State of Massachusetts, but of other States. The work of the State Board has been nobly done, and on behalf of our common humanity, as well as of the medical profession, we gratefully tender our thanks.

But this is not enough. Other States, Virginia and Louisiana, have established State Boards of Health. Surely the State of Michigan ought not to delay longer. Receiving from others it should contribute of its knowledge to the common good.

Further, we owe it to our people as a mass, to have those competent study our people as a unit in the particular conditions by which they are surrounded. The results of these studies being brought home to the popular minds in a thousand different ways, would enable them to act, as to be more comfortable, prosperous and long lived. In this way the growth and powers of our State would rest on the safest foundation, the obedience of its citizens to the conditions under which they exist. What are these conditions? What is their bearing upon each one of us, and all together? What are the causes of epidemics, effects of locality, employments, different kinds of food, clothing, drink, air, et cetera, upon the public health?[23]

The public was also appealed to by other physicians who used every occasion to create an opinion in favor of a state board of health. Drs. Robert C. Kedzie, Homer O. Hitchcock, E. W. Jenks, A. B. Palmer, I. H. Bartholomew, and Henry B. Baker labored long and hard to attract a following for the plan.[24]

At the sixth annual meeting of the State Medical Society in 1872, Dr. H. O. Hitchcock, president of the Society, made a number of requests of the membership in the course of his presidential address. These included a request for the appointment of a committee to appeal to the governor for the creation of a state board of health, and another for an investigation of the laws of hygiene in their relation to the public schools.[25] Later in this same meeting the committee, to whom these requests were referred, submitted a report which was accompanied by the reading of a part of the address and recommendations as follows:

RESOLVED, That a select committee of three, of which President Hitchcock shall be chairman, be appointed to report at our next meeting, on the laws of hygiene in their relation to our public schools.

WHEREAS, Governments are properly instituted to secure to the people certain inalienable rights, prominent among which is life;

AND WHEREAS, Many deaths and many forces leading to death arise from causes which individuals are powerless to avoid, but which it is believed might be removed by proper State action;

AND WHEREAS, Memorials to this effect have been prepared and signed by numerous prominent citizens of this State, including the entire Faculty of the Medical Department of the State University, the officers of this State Medical Society, and many others prominent in our profession, as well as other citizens, and such memorials have been presented to the Governor of the State requesting recommendations, and to the Legislature at its last regular session, asking for the establishment of a State Board of Health or other action thereon;

AND WHEREAS, Several of the County Medical Societies in this State have taken action upon this sub-

ject, recommending State action; a prominent journal —"The University Medical Journal"—has repeatedly called attention to its importance; and the American Medical Association has considered the subject of such importance as to appoint a committee to memorialize the Legislature of every State in the Union upon this subject, praying them to establish "State Boards of Health;"

AND WHEREAS, The Governor of this State has not yet made any recommendations, and the Late Senate refused to pass a bill which had been approved by a large number of intelligent men familiar with the subject, and who had memorialized the Legislature as aforesaid; therefore

RESOLVED, That we should be false to our high calling as physicians, while knowing the great number of unnecessary deaths, if we did nothing towards warning the people of their danger, and informing them of the possibility of preventing such mortality, or towards pointing out proper methods of prevention; that it is and is hereby declared to be the duty of every member of this Society to continue to do all in his power to aid in securing State action toward preventing unnecessary deaths and sickness among the citizens of this State, from removable causes.

RESOLVED, That believing this subject of life and death of paramount importance to the people, and recognizing the power of the combined influence of the physicians of this State, when acting together with no selfish interest, and only for the promotion of human welfare, we urge upon the officers of the State, our legislature, and all who have the public well-being at heart, to use all of their influence both as citizens and officers of government, to take such action as shall secure to as great a number as possible the conditions which render life possible and desirable.

RESOLVED, That a Committee of three be appointed by the Chair to personally see the Governor of the State and urge upon him the importance of bringing the subject of State Medicine to the attention of the next Legislature, and that said committee be instructed to take such other action by memorializing the Legislature, or otherwise, as shall tend to secure the enactment of proper laws for diminishing sickness and mortality within our State.[26]

The report of the committee was accepted and adopted by the Society.[27] To the Committee on School Hygiene were named Dr. Hitchcock, Chairman, Professor R. C. Kedzie, Dr. J. J. Noyes, and Dr. Theo. McGraw. This committee made reports the following year which attracted wide attention. Newspaper publicity given them, it is said, did much to interest the laity in the need for sanitary reform.[28] The other committee named to wait on the governor consisted of Doctors H. O. Hitchcock of Kalamazoo, George R. Johnson of Grand Rapids, and Robert C. Kedzie of Lansing.[29]

Both Governor Henry P. Baldwin and Governor John J. Bagley were appealed to by the committee to make favorable recommendations in their messages to the legislature for the creation of a State Board of Health.[30] In consequence of these appeals, both governors devoted a part of their addresses to this subject. Said Governor Baldwin:

Your attention is respectfully directed to the fourth annual report of the Secretary of State, relative to births, marriages, and deaths. This report has been prepared with great care, and is a work of much interest. It has been suggested by those who have given this subject much thought and attention that the organization of a State Board of Health would greatly conduce to the general welfare of the commonwealth by so utilizing these statistics as to show their bearing upon the physical, moral, and mental condition of the people.

The expense of such a Board need not materially increase the cost of this work as it now occupies the time of an additional clerk in the office of the Secretary of State, and the same duties would be performed by the Secretary of the Board, who should be its only salaried officer. While the expense would be small, great good might be accomplished in the way of sanitary reform. This subject is entitled to your careful consideration.[31]

On the same occasion, in his initial address as Governor of Michigan, John J. Bagley declared:

The establishment of a State Board of Health is urged upon your consideration by the State Medical Society, and by many thoughtful persons who have given the subject careful study. That it is the duty of the State to aid in protecting and preserving the lives of its citizens, requires no argument. We build and maintain asylums for this end. We regulate wtih minute detail the running of railroads, that life may be made safe and secure thereon. We forbid the sale of adulterated food, medicines, oils, etc., all showing that the State recognizes its duty in this matter. An active working State Board of Health, not overloaded with theories, composed of practical sensible men, would doubtless be of great service in preventing disease, preserving life, and diffusing among the people a more general knowledge of the laws of health.

This subject is attracting the notice of governments and individuals throughout the civilized world, and is worthy of your careful attention.[32]

Second Bill Introduced into Legislature

At the same time that these efforts were made by the State Medical Society's committee, one of their number, Dr. I. H. Bartholomew, carried the fight for a State Board of Health directly to the legislature. According to MacClure, Dr.

Bartholomew ran for the legislature "to further the proposed establishment of the State Board of Health."[33] One of his first acts in the legislature was to offer a resolution requesting a standing committee on public health[34]—which was granted. To this committee was referred that portion of Governor Baldwin's and Bagley's messages that dealt with vital statistics and public health.[35] On February 6, 1875, the committee reported the initial bill for the appointment of a superintendent of vital statistics and the establishment of a State Board of Health.[36] The bill as presented differed from the one introduced previously in that it did not dictate to the governor who should be appointed members of the board. Known as House Bill No. 81, it was next referred to the committee of the whole.[37]

This committee added a few amendments. Later when it was returned to the House of Representatives, other amendments were proposed.[38] One member of this body moved that the secretary of the proposed board be "a physician of the Homeopathic School." Another moved that the board be made to consist of equal numbers of physicians from Homeopathic and Allopathic schools.[39] One member of the Senate was most persistent in his efforts to have the proposed act provide that the state board of health be a court of appeals or a court of final action for the abatement of nuisances in the state. The effort to keep the latter amendment out of the act caused considerable opposition to arise.[40] Fortunately, none of these contemplated amendments received sufficient support to alter the nature of the original bill.[41] In the Senate the bill fared much better, receiving a two-thirds vote of all the Senators.[42] On the return of the bill to the House of Representatives, it was read a third time, and on February 20, 1873, a vote was taken. Fifty-three legislators voted in favor of the act, and twenty-seven opposed it. Following the vote Dr. Bartholomew moved that the bill be ordered to take immediate effect but failed to receive sufficient support for his motion.[43]

On April 13, 1873, Governor Bagley signed the bill[44] which now became Act No. 81, Laws of 1873 (An Act to establish a State Board of Health to provide for the appointment of a Superintendent of Vital Statistics, and to assign certain duties to Local Boards of Health). From available accounts it is learned that the law did not take effect until July 30, 1873.[45]

Members of the legislature other than Dr. Bartholomew, whose efforts in behalf of this act resulted finally in its passage, included Senator H. H. Wheeler, who had charge of the bill in the Senate, Senator J. Webster Childs of Ypsilanti, and the Hon. L. D. Watkins of Manchester.[46] In addition to these gentlemen, the following legislators also assisted in the work of getting the measure adopted: Dr. Manly Miles, Stephen D. Bingham, and Benjamin B. Baker of Lansing; Dr. A. F. Whelan of Hillsdale; Dr. S. S. French of Battle Creek; and Dr. E. J. Bonine of Niles.[47]

At the time that the State Board of Health was established, there were three other state boards of health in existence; namely, those of Massachusetts, established in 1869; California, established in 1870; and Virginia, established in 1872.[48] According to Garrison, a state board of health had also been established in Louisiana as early as 1853.[49]

First Meeting of the State Board of Health

"Gentlemen: In accordance with the request of the Governor I have asked you to convene at this time, in order that, at the earliest possible day, the Michigan State Board of Health might be organized and ready for its work.

"I trust it may not be considered impertinent for me to suggest an outline of the work that seems to me to have been laid upon us.

"For years some of us have been laboring earnestly for the establishment of such a Board in this State. The arguments for its establishment were many and weighty, and the words free and earnest with which we urged it. As it is far easier for most people to show that something ought to be done, than definitely to point out what that something is; to lay burdens upon other's shoulders than to assume them themselves, so we found real pleasure in urging the preparation of a burden for somebody's shoulders, not stopping to think "what if it should be let down upon our own?" And I imagine that each one of us received a little shock one day and, for a time at least, an abatement of his zeal in the cause of Preventive Medicine, when our good Governor gently laid upon us his hand and the burden of making a State Board of Health popular with, because useful to, the people of the State.

Here, then, we are today, face to face with the questions, "What is the work to be done by this State Board of Health?" and "How are we to do it?"

* * * * * * * * *

Thus, at a low estimate, there might be saved to this State, if the people were properly instructed in and would carefully observe the principles of hygiene, 2,000 lives that are now annually sacrificed by ignorance and neglect . . .

Here, then, is the work for this board to do: to edu-

cate the people in respect to the nature and causation of diseases, and the means for their prevention; to suggest appropriate legislation for compelling, when necessary, the use of those means and to present arguments for such education and legislation, fortified and made cogent by facts—2,311 authenticated cases of disease and death directly traceable to ignorance, neglect or disobedience of the law of hygiene; and to make it possible by this work that many if not all of the lives and much of the treasure now needlessly lost to the state may be saved.

I bespeak from every member of this board, harmonious, earnest, faithful, though unpaid, labor in this cause, and I am sure there will follow victories of grander proportions and of broader and more vital interests to mankind than any that have been or may be achieved in medicine as a strictly healing art.

In the words of one who, I venture to hope, will be chosen secretary of this Board, "Grander victories, of greater importance to the people, remain to be achieved than any which have heretofore resulted from warlike methods." "To the peaceful hero who shall call forth and so marshal facts and generalize the scattered forces of knowledge as to lead to a victory over any one of the prominent causes of death which now annually destroy our citizens by hundreds of thousands, humanity may well accord a higher praise than to the most successful of warlike generals."

Gentlemen, I welcome you to this work, grand, self-sacrificing, and sublime."[50]

Thus did Dr. H. O. Hitchcock, as senior member and temporary chairman, introduce the work of the State Board of Health to its first members. Present at this initial meeting besides Dr. Hitchcock were Dr. Robert C. Kedzie, Rev. J. S. Goodman, and Dr. Z. E. Bliss.[51]

Business transacted at this initial meeting consisted of the election of officers and the adoption of by-laws and rules of order for the government of the Board.[52] Dr. Hitchcock was honored by being elected the first president, and his very close friend, Dr. Henry B. Baker, was made secretary.[53] And "with mingled feelings of hope and fear" the Board entered upon its work.[54]

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10. *loc. cit.*
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12. *loc. cit.*
13. Trans. M.S.M.S., V. (1872), 65.
14. MacClure, *op cit.*, p. 9.
15. *loc. cit*
16. Trans. Amer. Med. Assn., XXII (1871), 36.
17. *loc. cit.*
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19. *ibid.*, p. 61.
20. Det. Rev. Med. and Pharm., VIII (1873), 266.
21. MacClure, *op. cit.*, p. 9.
22. *loc. cit.*
23. Det. Rev. Med. and Pharm., VII (1872), 571.
24. MacClure, *op. cit.*, p. 9.
25. Trans. M.S.M.S., V (1872), 64.
26. *ibid.*, p. 43; Dr. H. B. Baker was chairman of this committee.
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28. MacClure, *op. cit.*, p. 30.
29. Trans. M.S.M.S., *op. cit.*, p. 115.
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31. J. House. of Rep., State of Mich., I (1873), 63.
32. *loc. cit.*
33. MacClure, *op. cit.*, p. 9.
34. J. House of Rep., State of Mich., *op. cit.*, p. 91.
35. *ibid.*, p. 477.
36. *loc. cit.*
37. MacClure, *op. cit.*, p. 9.
38. J. House of Rep., State of Mich., *op. cit.*, p. 784.
39. *ibid.*, II (1873), p. 858.
40. MacClure, *op. cit.*, p. 34; An. Rep., S.B.H., VI, 14.
41. J. House of Representatives, State of Mich., I (1873), 858.
42. *ibid.*, III (1873), 2163.
43. *ibid.*, I (1873), 858; *ibid.*, p. 859.
44. *ibid.*, III (1873), 2223.
45. An. Rep. S.B.H., I, 3.
46. MacClure, *op. cit.*, 10; Dr. Bartholomew was prevented from becoming a member of the State Board of Health because of a constitutional provision which prevented any member of the legislature from receiving an appointment on a Board created by the legislature of which he is a member. (*ibid.*, p. 11).
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MSMS

The Mediastinal Glands in Undulant Fever

By William S. Martin, M.D.
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■ THIS article is not intended to be a comprehensive discussion of undulant fever, but is presented solely in the hope that it will add something worthwhile to our all too meager knowledge of an old disease steadily assuming new and greater significance.

Undulant fever has been, and still is to a great extent, something we began to think about only after all other possibilities have been exhausted. Insufficient knowledge of the disease, vague and protean nature of the symptoms and lack of constancy of a positive serology appear to be the main reasons for this.

The lack of complete understanding is well demonstrated by the fact that while practically all text books and journal articles mention the frequency of a dry, irritative, nonproductive cough, I have never encountered any attempt to explain the causative pathology.

I have observed six cases of undulant fever with this cough; in all six the x-ray has shown moderate and marked enlargement of the mediastinal nodes. In three of these cases the agglutination was never positive; but in the other three it was conclusively so. Only the latter three reports are given here; though, clinically, there is no doubt in my mind as to the others being true undulant fever.

Case 1.—S. M., aged thirty-three. Agglutination positive, February, 1939. Film No. 3832, taken March 14, 1939.

"Films of the chest show the costo-phrenic angles and diaphragm are clear. The heart and superior mediastinum are within normal limits. Both lungs show a marked enlargement of the hilum shadows with some increase in parenchymal markings radiating outward from them. The apices and periphery of the lungs are clear."

Film No. 3870, taken April 4, 1939

"Film of the chest shows a marked glandular enlargement at both hila. On the right they are fairly smooth in contour. The left side shows, in the flat film, what appears to be some parenchymal infiltrations. The apices and periphery of the lungs are clear. Previous films are not in our file so comparison cannot be made."

Case 2.—C. D., aged twenty-one. Agglutination positive, December, 1941. Film No. 5104, taken Feb. 11, 1942.

"Films of the chest show an increase in the glandular enlargement at the right hilum and an increase in the fluid at the right costophrenic angles, since the previous examination of January 21, 1941. There is no evidence of lung pathology."

Impression: "Fluid right pleural space. Enlarging glands at right hilum."

(Author's note: Fluid probably due to intrathoracic pressure; as no other explanation was found.)

Case 3.—G. D., aged thirty-one. Agglutination positive May, 1941. Film No. 6116, taken April 13, 1941.

"Films of the chest show a symmetrical chest, clear costophrenic angles and smooth diaphragm. Heart and mediastinum are within normal limits. Marked glandular enlargement at both hila. No evidence of parenchymal involvement."

Two of these patients were running a low grade fever at the time of the x-ray examinations, though not acutely ill. The third was febrile and acutely ill. All had a peripheral lymphadenitis but no palpable spleen. All were ambulatory.

One later had deep roentgenography without marked diminution in the size of the chest glands, and temperature remained unchanged. Chest pain of "heavy, dull, aching" character was complained of by this patient, and the chest findings remain unchanged after three years. The other two had no symptoms referable to the chest except cough.

Summary

1. Three cases of proved undulant fever with mediastinal adenitis, and dry, non-productive cough are cited.

2. A theory for the explanation of this cough is presented.

3. It is hoped that further investigation will reveal that this mediastinal adenitis is of sufficiently frequent occurrence to be of diagnostic aid, especially in the absence of a positive agglutination.

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Acute Laryngotracheobronchitis*

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■ DURING the past two decades increasing attention has been brought to the disease, acute laryngotracheobronchitis, and it has come to be known as one of the most capricious diseases confronting the medical profession. To date, even in the most capable hands the death rate is still appalling. Many forms have been described and the etiology has varied according to different investigators. It is agreed among those who have had anything to do with this condition that the most perplexing type is that form in which thick, tenacious, gummy, glue-like exudations are formed either within all or within part of the laryngotracheobronchial tree. That a milder

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form of the disease exists, is also apparent, for it has been our experience that tracheotomy has been sufficient operative intervention to procure recovery.

From statistics in the literature it will be seen that a patient with such a condition has an 80 per cent to 20 per cent chance for recovery. The most encouraging reports are those of Brenneman et al.[1] who list a mortality rate of 25 per cent in twelve cases during 1936, and more recently, Galloway[3] who lists a 20 per cent mortality rate in ten cases. The present study was undertaken to determine experiences with this disease during the past several years at the University of Michigan Hospital.

After reviewing several hundred records at the University Hospital from the year 1925 to the present, it was found that the disease was neither diagnosed nor treated as it is now until the year 1930. Undoubtedly the disease did occur but went unrecognized and many deaths attributed to some other cause may have been due to this condition. On the other hand, the diagnosis of acute laryngotracheobronchitis was made many more times than was justified. Many adults were diagnosed as having this condition when in reality they had no more than acute laryngitis, tracheitis, pharyngitis or even bronchial pneumonia. The records revealed further that the diagnosis of this disease in children was also incorrect on many different occasions. Confusion with croup was noted more frequently than with any other condition, but as in the adult group, the confusion also included the diseases listed above. In fact, in the elaborate coding system at the University Hospital this disease has had no place of its own and has been coded under the various headings of laryngitis, tracheitis, bronchitis, tracheotomy, and under foreign body. Incorrect diagnoses prove conclusively that the true nature of the disease has not yet been fully appreciated. By careful exclusion and inclusion the diagnosis of acute laryngotracheobronchitis was justified in a group of thirty cases; twenty-eight of these cases were treated at the University Hospital and two were treated at St. Joseph's Mercy Hospital. Although all the patients of this group did not form exudations that required mechanical removal, they required surgical intervention of one sort or another or died before such aid could be administered. I feel that in the face of many incorrect diagnoses, these thirty cases may in all respects be the true disease entity under discussion. Twenty of this group of patients died, making a mortality rate of 67 per cent.

Analysis of Cases and Their Treatment

Sex Incidence.—Males appear to be affected approximately twice as often as females, for in this group of thirty cases there were twenty-one males and nine females.

Age Incidence.—Twenty-two of the patients were two years of age or under and of the remaining eight patients the eldest of the group was seven years. These figures again emphasize the point often stressed; namely, that the great majority of these cases occurs in the very young patient.

Relation of the Disease to Foreign Body.—That this disease occurs following the aspiration of a vegetal foreign body is well known, and it is often manifested here in its most severe form. Considering the bean as a foreign body in the bronchus, Clerf[2] states:

> "Atelectasis was a common anatomical finding and was associated with severe laryngotracheobronchitis. . . . The incidence of tracheotomy and the mortality rate were higher in these than any other group."

Regarding dyspnea, he points out:

> "It was observed most frequently in cases of vegetal foreign bodies. Many of these substances set up a septic laryngotracheobronchitis in young children who constitute a majority of the vegetal foreign body cases. Tracheotomy was performed for the relief of obstructive dyspnea and to aid in ridding the tracheobronchial tree of excessive secretions in fifty-two cases of foreign bodies in the air passages. . . . Forty-three of the fifty-two tracheotomies were performed in cases of vegetal foreign bodies."

In our series of thirty cases seven patients developed acute laryngotracheobronchitis following the removal of a vegetal foreign body. Several of these patients had had bronchoscopies and attempted removal of the foreign body before being sent to the University Hospital. After the successful removal of the foreign body, all required tracheotomy for the relief of obstructive dyspnea and for the removal of excessive exudations from the trachea and the bronchi. In spite of all therapeutic measures, six of these patients

died, making an unusually high mortality rate of 86 per cent.

Tracheotomy, Intubation and Low Bronchoscopies.—The disease developed in twenty-three cases that were not associated with a vegetal foreign body, and twenty of these (87 per cent) were tracheotamatized, as contrasted to 100 per cent of the foreign body cases. Of the remaining three, one died before such a procedure could be carried out and the other two were intubated. Both of these patients died shortly after coughing their laryngeal tubes out, and postmortem examination proved that the method of choice of treatment should have been tracheotomy with subsequent removal of gummy exudations. It is interesting to note that death occurred at the end of six days in one and at the end of two days in the other. No doubt valuable procedures could have been carried out in this interval.

In the group of twenty patients requiring tracheotomy, it is important to differentiate the mortality rate in those necessitating low bronchoscopy because of crust formation and those who did not exhibit this condition. This would possibly clarify the hypothesis that crust formation alone is a suitable criterion by which to judge the severity of the disease. Low bronchoscopies were required on repeated occasions for removal of crusts in six patients and of this group, three died, a mortality rate of 50 per cent. Low bronchoscopies were not done in the remaining fourteen patients because it was felt that there was no clinical evidence of crusts, yet 8 of this group died, a mortality rate of 57 per cent. Two of the youngest patients, one seven and the other one eight months, fell in this latter group. Following tracheotomy both became so desperately ill that it was felt that low bronchoscopy should be carried out even though the air passages seemed clinically free. Both died while the bronchoscope was being passed. No large obstructing crusts were found in either case. However, a thin glistening exudate covered the trachea and extended down into the bronchial tree as far as could be seen through the bronchoscope. The question arises whether bronchoscopy was carried out too late in these two cases, and there is, of course, no way of answering this question. Large obstructing crusts, partial casts of the trachea and bronchi are readily and speedily removed through the bronchoscope but it is the very thin tenacious exudations that cling not only to the larger structures of the tracheal bronchial tree, but the smaller structures as well, often involving the lung itself that cause the difficulty in removal. It is this type of exudate in all probability that accounted for a mortality of 57 per cent in those patients where low bronchoscopies were not carried out.

Significant Case Reports

Case 1.—C. S., aged six months, negro, male, with upper respiratory infection and twenty-four hour history of laryngeal obstruction, entered University Hospital for observation. After conservative treatment for thirty hours, tracheotomy was performed. Approximately three hours after this procedure, the patient coughed the tracheal tube out. This was immediately replaced but the patient's condition from then on was precarious and death occurred.

Comment.—At post-mortem examination the diagnosis of acute laryngotracheobronchitis was confirmed but in addition, bilateral tension pneumothorax were found. There was a marked emphysema of the areolar tissue of the anterior mediastinum, the bullæ being very large and their general appearance not unlike that of multiloculated soap bubbles. The walls of these bullæ were extremely thin and it is reasonable to assume rupture of some of these through the parietal pleuræ with the production of the tension pneumothorax bilaterally. No break in the surface of the lungs was noted. As Richards[4] has pointed out, it is not necessary to find a macroscopic break in the lung surface to explain the formation of pneumothorax, but on the other hand it may occur following the rupture of a microscopic bleb on the lung surface with the escape of air into the pleural cavity. It is logical to assume that such a process did not occur in this patient, for the mediastinal emphysema was so great in amount that it was assumed to be the direct result of not replacing the tracheotomy tube into the trachea properly when it was coughed out and that the patient simply forced air into the anterior mediastinum to produce the emphysema which undoubtedly was responsible for the tension pneumothorax and the subsequent early death. Clinically the pneumothorax was entirely overlooked.

Case 2.—J. C., white, female, aged eighteen months, aspirated a pecan nutmeat five days before admission

to the hospital. Twenty-four hours before admission a bronchoscopy was done elsewhere without success. The foreign body was removed successfully the morning after admission and tracheotomy was done that same evening because of laryngeal obstruction. During the next six days nineteen low bronchoscopies were done to remove crust formations. At the last bronchoscopy the patient died suddenly.

Comment.—This patient was evidently well on the road to recovery for the bronchoscopist pointed out that the tracheal and bronchial mucosa were approaching the normal in appearance and were practically free from exudation. The patient's clinical course was deemed entirely satisfactory until death occurred. At the time of death an attempt was made to inject adrenalin intracardially but instead of obtaining blood, 2 to 3 c.c. of a clear, straw-colored fluid were obtained. Unfortunately the fluid was not cultured or examined by the microscope. Postmortem examination was not permitted. Suffice it to say that a pleural effusion was overlooked while the patient was alive. Both of these cases have been presented to emphasize the necessity of recognizing clinically the complications that arise during the course of this disease and to institute proper therapy.

Medical Treatment

Recent literature has contained many references pertaining to supportive measures that are demanded in the treatment of acute laryngotracheobronchitis and to avoid repetition, those points in the therapy that are so often stressed will not be discussed.

Since 1937, we have used sulfanilamide and its allied compounds in the treatment of this disease. The blood level of the drug was considered adequate when it was maintained between 8 to 12 mg. per 100 c.c. of blood. In those patients in which these compounds, particularly sulfanilamide, were not tolerated by mouth, they were given intravenously. In addition to maintaining the chemotherapy we were also in this way able to regulate more readily the fluid intake. All the patients did not receive full therapeutic doses of the drugs but when this group of patients was compared with the group that did receive adequate doses there was little or no noticeable difference in the clinical course of the disease.

The coincidental dangers associated with low bronchoscopies are again stressed, because as stated previously, two patients died while the bronchoscope was in place. As pointed out by Galloway[3] lavage with subsequent suction is probably a factor in decreasing the mortality rate in his series of cases. Many solvents have been recommended for this purpose and the one found by us to be the most efficacious is distilled water. After the instillation of 4 to 6 c.c. of water into the tracheotomy tube the patient is turned from side to side and is then suctioned, first being careful to pinch off the soft rubber suction tubing until it is well down into the trachea or bronchi to avoid trauma to the already diseased mucosa. This procedure is repeated as often as is indicated and may have to be supplemented by low bronchoscopies. An additional factor of much importance is supersaturation of the atmosphere with moisture and preferably a room set aside for this purpose is ideal as compared with the croup or steam tent. A coincidental rise of atmospheric temperature noted in the croup tent tends to make an already desperately ill patient more uncomfortable. By the employment of the newer humidifying units the ideal saturation and temperature may be obtained.

Conclusions

The disease entity, acute laryngotracheobronchitis, is still frequently misunderstood and misinterpreted.

Acute laryngotracheobronchitis associated with vegetal foreign body is probably the most vicious form of the disease and presages the highest mortality.

Gross crust formation cannot be used as a sole criterion to judge the clinical course and seriousness of this disease. Thin, tenacious, adherent macroscopic and microscopic exudations, even though the air passages appear patent, if not recognized and treated speedily and properly, will continue to cause the death of an appalling number of patients.

Complications arising in the course of the disease are readily overlooked if not kept constantly in mind.

It is doubtful that sulfanilamide and its related compounds have appreciably affected the prognosis of this disease.

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MSMS

Trigerminal Teratoma of the Sacrum

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THE elder Senn, in his work on "Tumors," defines a teratoma as "a tumor composed of various tissues, organs, or systems of organs which do not normally exist at the place where the tumor grows." Teratomata contain tissues or higher structures derived from two or all of the blastodermic layers. The highest type of a teratoma is a fetus *in fetu*. In the simpler varieties the tumor is composed of heterotopic tissue, such as bone, teeth, skin, mucous membrane, et cetera. All teratoid tumors are congenital, that is the tumor either exists at the time of birth or the patient is born with the essential tumor matrix. Any human structure may be found in a teratoma. They are divided into external and internal types. To the external belong the parasitic fetus and the suppressed fetus. A parasitic fetus is the result of fusion of two embryos, one having gone on to complete development, and the other developing partially.

A suppressed fetus is an irregular mass attached to the posterior surface of the sacrum, to the chest, or to the abdomen. It contains a conglomeration of tissues and fragments of organs, for instance, bone, cartilage, lung tissue, kidney tissue, a piece of intestine or a portion of liver. The internal teratoma may be found within the cranium, chest, abdomen, or pelvis.

Case Report

History.—Mrs. F. L., aged thirty-one years, first came to my office September 27, 1941, for prenatal care. Her past obstetrical history revealed one miscarriage of three and one-half months, three children living and well, aged eight years, five years and two and one-half years, all normal full-term babies. Last normal period was July 6, 1941. Periods previously were all regular every twenty-eight days, lasting five to six days. Expected date of delivery was April 15, 1942.

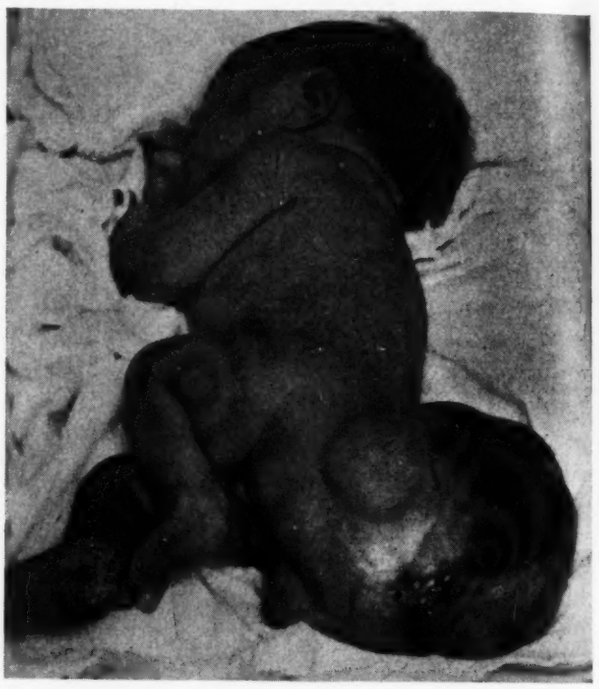

Fig. 1. Appearance of child before operation.

Examination.—Blood pressure was 105/68, which was the average over the last seven months of pregnancy. Weight was 133 pounds. Weight on April 14, 1942, was 148 pounds, an average gain of 15 pounds throughout the seven months. Urinalysis was essentially negative. Blood Kahn test was negative.

Clinical Course.—In February, 1942, the patient developed a moderate edema of the lower body but urine and blood pressure did not vary from normal. Salt was restricted, elimination was increased and the patient advised to stay in bed. On this date examination of the abdomen revealed a large mass in the left upper quadrant with fetal heart tones to the left and below the umbilicus. Rectal examination revealed a head in the pelvis. A diagnostic x-ray examination was advised but was refused by the patient so a diagnosis of multiple pregnancy was made. There was no family history of multiple pregnancy.

On April 1, 1942, the patient went to the hospital with uterine contractions every five minutes but after remaining there two hours the pains disappeared. She remained in the hospital for two days and looked and felt much better for the rest. The edema disappeared and she was discharged from the hospital.

On April 15, 1942, the patient returned to the hospital with very strong labor pains and was prepared

for delivery. The membranes ruptured spontaneously and the head showed in the next few contractions in a L.O.A. position. While attempting delivery there appeared to be something locking the fetus, so the arms were delivered and the baby forcibly extracted sufficiently to clamp and cut the cord. The condition of the baby was excellent at all times. The mother was anesthetized and a hand passed up along the back of the baby. Near the sacrum of the baby could be felt a large firm tumor mass that was impinging above the brim of the pelvis. Very firm pressure was placed on the mass through the abdomen. With that pressure and strong extraction on the baby, a live baby with a large sacral tumor was delivered. Two days later the baby was sent to the University of Michigan where Dr. Edgar A. Kahn of the Department of Surgery removed the entire mass, which was partially cystic. It was dissected free from the underlying structures. The entire rectum and sigmoid colon were exposed in the removal of this tumor. By undermining the skin and transposing muscles an excellent closure was obtained. The child has done very well except for some breaking down of the wound. It is now entirely healed.

Pathological Report (Dr. Carl V. Weller).—This is a trigerminal teratoma which contains many cystic spaces lined by columnar epithelium, glial tissue, and esophagus epithelium

Physical Examination of Baby.—Temperature 98.6; weight 8 pounds, ¾ ounces; length 19½ inches; head circumference, 13⅛ inches; chest 13 inches. The child was a fairly well developed baby of good nutrition.

Protruding from the sacral region was a large cystic mass about one and one-half to two times the size of the baby's head. Over the surface of the tumor ran several large veins. The mass did not pulsate. The anus opened just anterior to the mass and the rectal sphincter was normal. After removal of the tumor the baby weighed 5 pounds, 13 ounces. Weight of tumor was about 2 pounds.

Summary

A case of a baby with an extremely large trigerminal teratoma of the sacrum, which was removed surgically with complete recovery of the mother and baby, is presented.

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"We know that sometimes a price must be paid for civilization and peace; and when madness and passion and the desertion of all the standards of decency and good faith bring a great agony to the world, it is sometimes the manifest duty and the high privilege of a free people, by the power of sacrifice and courage, to transmute that agony into a new salvation. In this war, we have no illusions about the strength of the enemy or the length of the war. We know that wars cannot be won by abstract nouns and that tyrants cannot be hanged by a string of adjectives. We have freely made our choice and we propose to abide by the issue with all free men until the end."—*California and Western Medicine,* (Sept.) 1942.

Rupture of the Heart

Report of Two Cases and Post Mortem Findings

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Report of two case histories of "Rupture of the Heart," with diverse symptoms and signs, in third and fifth decades of life, one being of congenital chest deformity origin; the other preceded by years of hypertension, simulating gall-bladder disease. Initial symptoms of rupture of heart simulate violent thoracic as well as abdominal conditions. If patient survives for a few days, bizarre signs of intrathoracic conditions, fluid masses and occasionally intra-abdominal signs.

■ RUPTURE or perforation of the heart is a term used interchangeably as descriptive of interruption of continuity of any one of the several portions of the heart's structure, and includes internal as well as external causes. For the sake of clarity and delimitation, we shall use the term rupture as meaning disruption of the continuity of the heart's structure as due to internal factors only, reserving the term perforation for instances of penetration by external agents.

The earliest reported instance of rupture of the heart is by Harvey in 1649,[1] and Krumbhaar and Crowell[3] in their survey of the literature from 1872 to 1928 collected 710 cases. The incidence of rupture of the heart in post-mortem records of large hospitals is an average of 23/12,000[3] which may be divided as occurring in the several portions of the heart as follows:

Left ventricle	79 %
Right ventricle	10.7%
Miscellaneous	3.2%
Left auricle	1.8%
Right auricle	5.3%

The age incidence[2] is distributed as follows:

80	7.6%
70	32.9%
60	34.2%
50	12.9%
40	7 %
30	2.4%
20	2.4%
10	1.2%
1-10	1.2%

Obviously the affliction is one of the aged.

The sex distribution[3] is variously given, the male incidence being 56.1 per cent to female, 43.9 per cent.

The gross pathological condition is essentially characterized by arteriosclerosis and hemopericardium, the latter of which is absent in a few and not mentioned in some case reports. Blood and serosanguineous fluid are in the pericardium as well as in the chest cavity. The majority make no mention of the coronary arteries at all and a few find them sclerosed.

Microscopic examination has been done only in a few cases. Interstitial hemorrhage and obliterative endarteritis of the nutrient arteries, and in some cases myocardial infarct and myocardial abscesses have been reported. In the upper age group, coronary thrombosis and sclerotic coronary occlusion is commonly found.

The exciting causes given[3] are exertion, such as rowing, straining at stool, lifting and shaving, intemperance in food and liquor, extreme obesity, bacterial endocarditis, and cardiac lesions including abscess, metastasis, tuberculosis and lues.

The onset is sudden, in some with a cry or groan, severe pain located variously in upper half of abdomen,[5] or in chest, radiating into left or right arm or both; or into the left shoulder blade or neck. Nausea or vomiting, or both, may be present.

The patient usually presents himself with pinched facies, cold clammy skin, with dyspnea, rapid weak pulse, which may be irregular and unequal. The heart sounds may be normal in character, feeble or distant. As fluid in pericardium and chest accumulates, the physical signs merge into those of pressure. Signs of pressure alter the clinical picture as in the case reported here, being secondary symptoms. The initial symptoms in any case of rupture of the heart are in 15 out of 18 cases those of coronary occlusion. The laboratory findings reported are meager, the leukocyte count varies from normal to 27,000.

The electrocardiograph reading, in the few surviving long enough, ten out of forty, is indicative of severe internal cardiac disturbance.[4]

Differential diagnosis in a youthful patient may have to be made between congenital potency, ruptured congenital aneurism of pars membranacea septi, and would rest on the youth of the patient, absence of a history of endocarditis, and of severe symptoms of acute cardiac collapse. In the adult it would need to be differentiated from such acute upper abdominal conditions as: perforation of gastro-intestinal tract; perforation of gall bladder, acute pancreatitis and intussusception of upper portion of jejunum.

The prognosis is very unfavorable, as more than 73 per cent die instantly and a bare 3 per cent live for five to eighteen days.

The two cases reported here are typical findings of ruptured right auricle:

Mr. L. S. B., American, aged thirty-two, single, laborer. This patient fainted while loading a truck on October 10. He was taken with severe, sudden pain in the pit of his stomach and into the right shoulder blade. He did not finish the loading, but rested and returned home. During the preceding month he had been taking medicine for his stomach without relief, for a distress which came on after eating or exertion, and also because of pain under his right shoulder blade.

Past history was uneventful except as noted.

Family history shows that two brothers have similar deformities of the chest wall, but not so severe as the patient.

Physical examination revealed a well-nourished man, apparently indifferent of himself, who did not appear acutely ill, nor in distress.

The chest had a depression about 5 inches deep in the center of the sternum, forming the "spout or funnel-like depression" in the center of the chest.

In the lungs breath sounds were distant anteriorly. Posteriorly, breath sounds were coarse toward the mid-axillary line, with a few râles at the base of the left chest. Breathing was abdominal in type with a "bellows-like" action of the lateral portion of the chest. Percussion at the base of the left lung revealed a pyramidal area of dullness.

The apex beat of the heart was at the third intercostal space but not localizable. The flatness extended to the anterior axillary line. Auscultation gave indefinite heart sounds, feeble and distant with an irregular, feeble pulse of 100 per minute. Abdominal findings were negative. Reflexes of pupils were present, but the left pupil was larger than the right and larger than normal. The abdominal and patellar reflexes were present and active. Temperature was 98.6 F.

We presumed a pericardial hemorrhage to be present, and gave a poor prognosis. The patient died quietly during the night after having been up and around during the day inspecting the farm.

Post mortem examination revealed a man about thirty-two years of age, approximately 65 inches tall, weight 155 pounds, muscular with extreme funnel-type chest.

The aorta and arch were pushed to the right of the vertebral bodies. The apex of the heart was on the level of the third rib, about the costo-cartilagenous margin. The pericardium was not adherent to

the lungs and contained about 400 c.c. of blood. The heart was of normal size, in systole, and on the anterior surface of the right auricle was a punched-out opening about 3 m.m. in diameter. The cut surface of the heart was normal. The valves were intact. The opening of the coronary artery was normal, no narrowing of orifice, lining was normal. Aortic surface was smooth and glistening. The lungs were "gourd-like" in shape with the small end toward the diaphragm. Cut surfaces were normal. The chest cavity contained about 800 c.c. sero-sanguineous fluid.

Liver was normal in color, contour abnormal because of compression under the diaphragm. The gall bladder, stomach, duodenum and kidneys were normal.

Anatomic diagnosis: Rupture of the right auricle, hemo-pericardium, sero-sanguineous plural transudate, and extreme funnel-shaped chest, with artificial joint.

Mr. W. K., aged fifty-five, farmer, widower, died suddenly without previous medical attendance. He had complained of marked pain over the precordium which radiated into the right shoulder and into the right arm down to the elbow, accompanied by a feeling of constriction in the chest and a sensation of impending death. He wanted to walk rather than recline.

Physical examination showed a patient with an expression of marked anxiety. Blood pressure was 110/90; pulse 90, irregular, weak, poorly transmitted. The lungs showed no râles and no dullness, no fremitus. The tentative diagnosis was coronary embolism.

This patient for several years had had a blood pressure ranging from 180-200 systolic with diastolic pressure 90-100. The kidney function was normal. His symptoms were an occiptal headache and right upper abdominal distress.

Post-mortem examination revealed the pericardium filled with blood and organized clots. The right ventricle on the anterior surface showed a rent about 3 cm. long. The pleural cavity contained 900 c.c. serosanginous fluid. Gross pathology of the abdominal organs was negative. A portion of the right ventricle was sent to Dr. E. W. Lange of Hackley Hospital, Muskegon, Michigan, who reported as follows:

"Specimen consists of a piece of heart muscle measuring 4 x 6 cm. The outer surface is in part covered with a thick layer of adipose tissue and in this is a prominent, hard, tortuous coronary artery. On either side of the artery is an area of black discoloration each measuring about 3 x 1.5 cm. In one of these areas the serosa is broken and reveals a gaping rent in the myocardium. On probing, this extends through the entire thickness of the muscle and the perforation measures about 1.3 x .4 cm. It has black, roughened edges. On opening the coronary artery it is found to be hard, brittle, chalky and difficult to follow. It does not remain laid open but is inelastic and tends to retain its original shape. The lumen is small and roughened by innumerable small, grey, hard, nodular protrusions. After about 2 cm. the lumen is partially occluded by a hard, finely granular blood clot. This rapidly increases in amount and soon the entire lumen is occluded by a well-organized clot. The muscle wall measures up to 1.1 cm. in thickness. The endocardium is covered with an adherent, partially organized blood clot. In fact, at the perforation the myocardium falls apart when cut. On repeated cross sections the increase in thickness of the vessel wall and corresponding decrease in size of the lumen, and the final obliteration of the lumen are very apparent.

"Microscopically, the epicardium is thickened and shows an increase in the amount of fat tissue. In part it is infiltrated with blood which shows some fibrin formation, pigment deposit, and an inflammatory cellular infiltration. It supports a coronary artery and a coronary vein. The artery has apparently been cut near one of its branches for two cross sections of it, lying side by side are noted. This artery exhibits a marked irregular thickening of the intima, leaving a small pyramidal shaped lumen. The intima at times is broken up and retracted, leaving minute ulcerations. The artery contains some red blood cells with fibrin formation, pigment deposit, a sprinkling of white blood cells, and some pink staining colloid-like material, apparently degenerated blood clot. This clot is adherent to the intima, especially at the indentations and minute ulcerations. The internal elastic membrane has disappeared and the media is likewise irregularly thickened, due to an increase in fibrous tissue. The smooth muscle tissue is normal and in some regions appears to be reduced in amount.

The adventitia is not remarkable. The vein has a somewhat thickened, hyalinized wall, is collapsed, and contains some hemorrhagic material with much pigment deposit. Further sections of the same block taken at different levels, show the increase in thickness of the arterial wall very evident and the contents of the lumen become more colloid in character, and the remaining hemorrhagic material shows more evidence of organization. The deeper layers of the myocardium show marked edema and scarring, the latter being especially pronounced around the tiny interstitial vessels. Both the superficial and deep layers of the myocardium are markedly fragmented and exhibit a very marked diffuse hemorrhagic engorgement, so that at times the muscle tissue is actually replaced by blood. This hemorrhagic material shows some fibrin formation, much pigment deposit and a diffuse plasma cell infiltration with some polymorphonuclear leukocytes.

"Microscopically, sections taken from another block show a much larger coronary artery. The component parts of the wall of this artery cannot be identified because the entire wall is converted into a thick mass of pultaceous material from which many spicules (cholesterin) have been dissolved out, and the outer zone of this material shows a diffuse small round cell infiltration. The lumen is very small, its diameter being about 1/5 that of the thickness of the vessel wall. It contains a small cluster of red blood cells surrounded by a colloid-like material which shows definite organization and is attached to the vessel wall. The epicardium in these sections is also infiltrated with blood and the myocardium almost completely replaced by hemorrhagic material as previously described.

"Anatomical Diagnosis: (1) Marked coronary sclerosis; (2) coronary thrombosis (or occlusion); (3) degeneration and rupture of myocardium; (4) hemopericardium."

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Lipomatous Replacement of the Left Gastrocnemius and Soleus Muscles Subsequent to Muscle Atrophy

Report of a Case

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■ A. B., white, female, seventy-two years of age, was admitted for hospitalization in June, 1927, complaining of "rheumatism" in both knees and ankles. It was learned at this time that the patient had noticed some disability of the left hip five years previously, a disability soon associated with lower extremity edema and some nocturia.

Physical examination on admission revealed the patient not to be acutely ill. Blood pressure was 240/124. Examination of the heart revealed a systolic murmur at the apex and an accentuated aortic sound, extra systoles and auricular fibrillation. Examination of the extremities revealed a small ulcer on the left leg and edema of both ankles. The patient complained of some pain in both knees and ankles on passive motion. Laboratory examinations revealed a negative Kahn and normal urine, blood, and non-protein-nitrogen.

The clinical impression was that the patient had hypertensive heart disease with congestive heart failure. The patient received digitalis and the usual hospital management. She expired in October of 1935, and the body was released to the Department of Anatomy for purposes of dissection.

In the course of the dissection, during which, it must be admitted, there was no unusual effort expended to study pathological changes, the following were noted: (1) a patent foramen ovale, measuring approximately ⅜ inch in diameter; (2) fibrosed and occluded uterine tubes; (3) a possible craniotabes with marked resorption of the parietal bones; (4) a typical posterior pharyngeal diverticulum, measuring approxi-

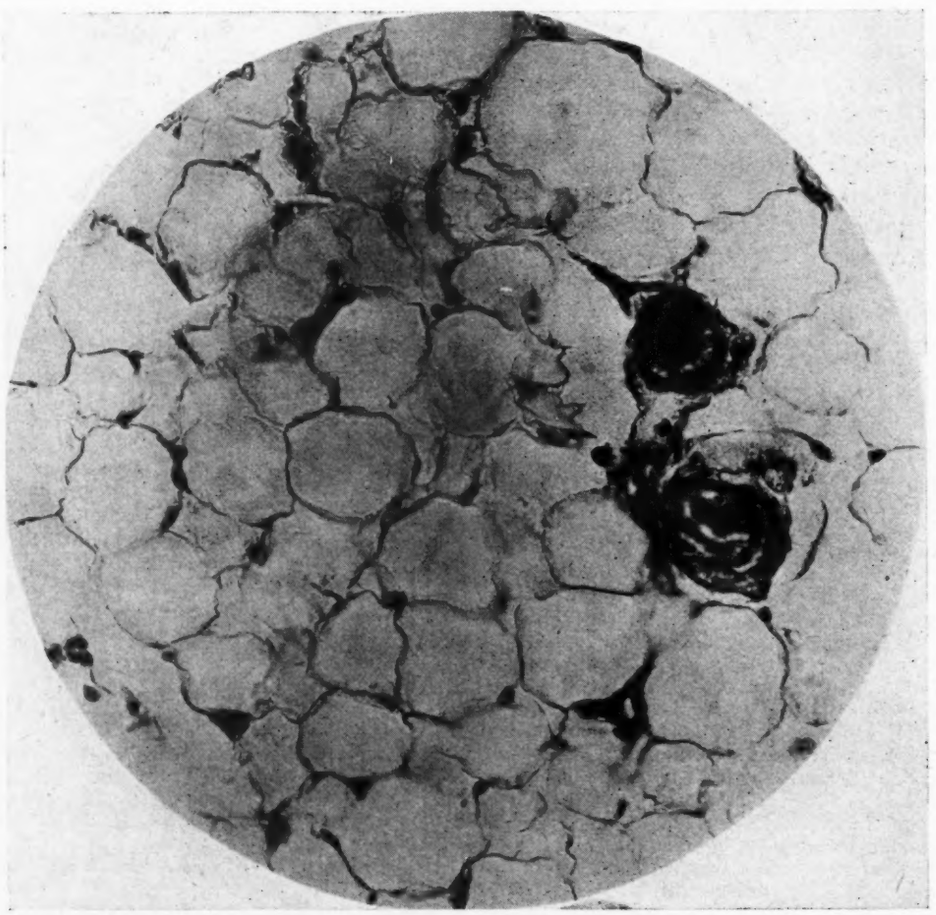

Fig. 1. ×500 diameters. Section typical of the lateral belly of the gastrocnemius and both bellies of the soleus muscles.

mately 5 centimeters in length; and (5) lipomatous replacement of the left gastrocnemius and soleus muscles subsequent to muscle atrophy.

On gross inspection the left gastrocnemius and the soleus muscles appeared essentially normal in size and shape. Both bellies of the left soleus muscle and the lateral belly of the left gastrocnemius muscle appeared to be composed entirely of fat whereas the medial belly of the left gastrocnemius appeared normal, except for a gross atrophy of approximately 25 per cent.

Microscopic examination of the involved tissues revealed a marked arteriosclerosis (Monckeberg's) of the left popliteal, posterior tibial, and perineal arteries and of the larger arteries within the muscles. (Gross examination showed this change to be quite generalized throughout the body.) The smaller intramuscular arteries and arterioles were normal. The arteriosclerotic change did not seem sufficiently advanced to interfere seriously with the nutrition of the muscles under discussion.

Sections of the medial belly of the left gastrocnemius showed a diffuse muscular atrophy with scattered areas of necrosis and a small round cell infiltration of moderate degree. Approximately 75 per cent of the normal number of muscle fibers showed atrophic changes or had been replaced by fat. Small nerve trunks within the tissue appeared perfectly normal.

Sections of both bellies of the left soleus and of the lateral belly of the left gastrocnemius consisted predominantly of adult adipose tissue. A few small and widely scattered islands of markedly atrophic muscle fibers could be seen in which there was a moderate amount of small round cell infiltration. Tendinous bands within the muscle and the tendo-calcaneous appeared normal as did small nerve trunks within the tissue.

Sections of the sciatic nerve appeared normal except for a slight fibrosis without appreciable nerve-fiber loss. We were unable to examine the spinal cord, but from the appearance of the sciatic nerve we should expect it to be normal.

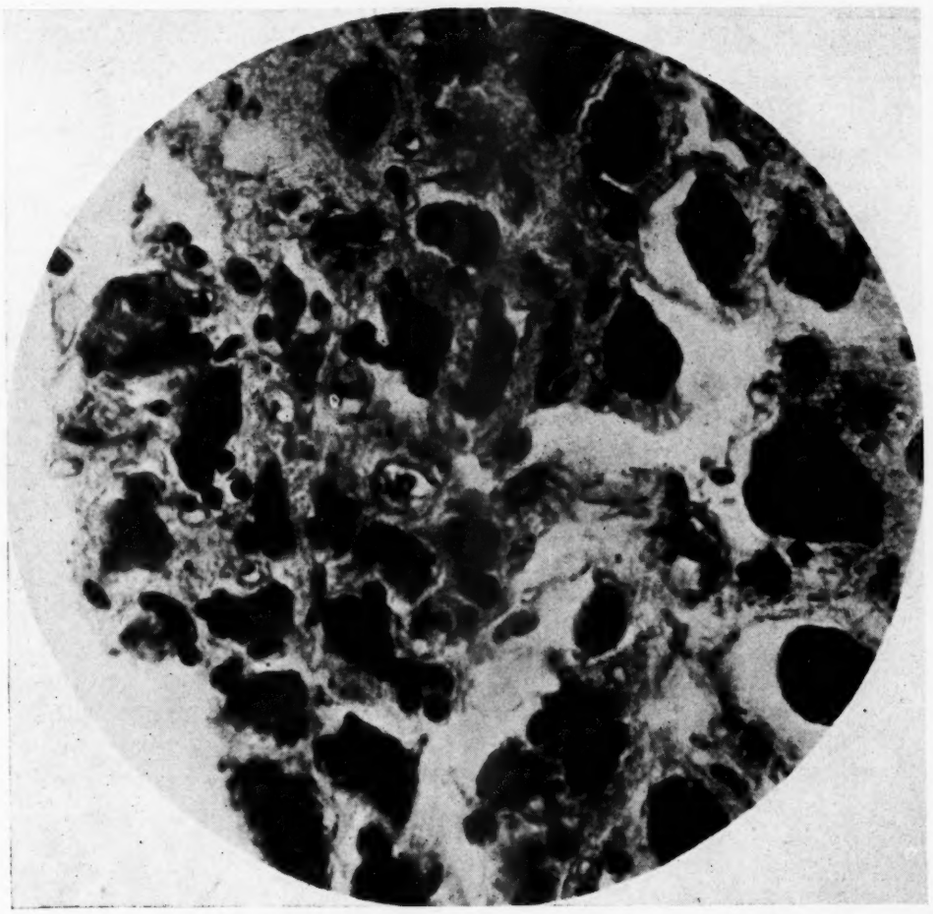

Fig. 2. ×500 diameters. Section typical of medial belly of the gastrocnemius.

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Effective pasteurization of all milk could wipe out *undulant fever* in our rural areas.

EDITORIAL

CIVILIAN MEDICAL CARE

■ We received recently a poster from the Nassau County Medical Society (New York) sent to its members to be hung in their offices: "Your Doctor, the War and You." Rules were given for the adequate and essential care of the civilian population. The notice says, "Remember your doctor has only twenty-four hours a day."

Almost a year ago several of our county medical societies in Michigan appointed committees to interview the press and get some sort of message to the public asking a fair deal for the doctor who has an added load to carry since his colleagues have gone to war. In most of our cities the call for doctors for the armed forces has left too few remaining. Lt. Col. J. G. Sleven reported that there were only eight yet available for Military Service in Kent County, three in Genesee, three in Kalamazoo, four in Jackson and four in Calhoun, as of October 5th, as an example of how our counties had been stripped of doctors.

About the middle of October, the public press reported that Kalamazoo had been so stripped of doctors that only 63 remained, and about nine of them would probably eventually be called. The medical society and the city were worried for the future. At this writing there are exactly thirty-eight left in Battle Creek. We are all short handed, but we believe the problem is not insolvable. If the people will use their good common sense, and look after their ills while they are only ills, if they will care for their incipient colds, if they will see the doctor in his office when they can still get there, if they will call him early so he will not have to retrace his rounds in his house calls, if they will remember that the doctor is only human, and needs the same rest, sleep and nourishment they do, then there will be energy enough and doctors enough to care for whatever may arise. Most of the doctors left in service at home are older (only seven under fifty remain in a certain city of 50,000 population, which is typical). The older men cannot do the strenuous rounds and give the unlimited hours that the younger men can and do. That is why the Army takes the younger practitioners. These older men, if allowed to care for themselves as they care for their patients, can still do a tremendous work, but they need sleep, regular meals, with time enough to eat without undue haste and some time for relaxation. If they can have this, and it is partly the responsibility of the public, there will be doctors left for the duration to look after those who need medical care.

We have a great fear for the coronaries and hypertensions that will develop unless some reasonable consideration is given, and some responsibility assumed by the public whom we serve.

Recently Washington has been intrigued by the needs of certain newly developed industrial centers, and some older ones, that are short of doctors and apparently have no way to recruit more. Surgeon General Parran of the USPHS was credited with the suggestion that his department could send in physicians to do the work in those places. A vicious precedent would be established to which we are unalterably opposed.

Propaganda is already working to that end. November *Harpers* has an article by Michael M. Davis, "The Doctor Shortage and How to Meet It," giving the program just outlined. Mr. Davis has been director of various clinics and dispensaries and an employe of the Rosenwald Foundation.

If this program were to be adopted the future can be easily seen. The Public Health Department may now secure men through Procurement and Assignment, so why not create shortages by calling men from private practice in a community, or many communities, and send them back as Public Health men under government pay and direction to take over the practices thus made available? We are not yet ready for that, but it is a logical next step.

When any community becomes short of doctors, to the point that Public Health Service must or should supply them, wouldn't a better method be to send back to that community those doctors who had been called into military service? They could be replaced in the armed forces by the other doctors which Public Health Service would have called.

President's Page

Best Wishes for Christmas and the New Year

MAY every physician in the Michigan State Medical Society find time for a happy interlude at Christmas. Our members are scattered over the world this year, but we can be united in spirit while observing yuletide.

May the New Year bring to all of us: the completion of our national effort to conquer our enemies; the unity of our people at home; the ending of world-wide conflict; the restoration of our men to their normal pursuits, and the successful establishment of lasting peace.

H. H. Cummings

President, Michigan State Medical Society

REVISED MEDICAL COURSE

■ DURING the past year, to help the War effort, the State Boards of Registration in Medicine have been asked by the War Department to speed up the time taken to graduate and qualify a doctor of medicine, so that more persons could be prepared for the use of the fighting forces. It was felt that advanced students could be hurried through, their courses shortened, or by some legerdemain they could be made doctors and available months earlier than the ordinary course of events would warrant.

The problem was brought to The Council and studied by that body. Vacations were shortened and school continued throughout the summer, thus making it possible to get the full thirty-six months of training in about three years. This compels the young people to attend school continuously from the finishing of preparatory school until graduation. This is too much of a strain on young constitutions, as we doctors know full well. We will find students ordinarily of A grade coming out average or mediocre. We have seen that already.

Is there not some other way? The medical man of the present generation is the most highly educated professional man within our ken. He must have a liberal college education of B grade or better or he cannot enter medical school. The medical course is four years of difficult subjects that know no limits as far as collegiate "hours" are concerned and certainly amount to an average of over twenty-five each semester. In four years that makes 200 "hours" of "postgraduate work" such as is earned in the quest for advanced degrees of M.A., M.S., Ph.D., et cetera, which degrees are given for thirty or ninety "postgraduate hours."

The average schooling for the doctorate degree in medicine takes over twice as many hours of study as are required for the highest degree offered, the Ph.D., the one so much sought by our educators, or "learned men." In all this array of study, in all this preparation for a very special field, is there not something that is superfluous, something that could be dispensed with? Is the curriculum that has been built over a period of so many years and including so much to be learned, the very best it could be? Has anyone given serious study to what could be condensed, what could be eliminated, what should be added?

There must be some improvements that would make for more efficiency, for a shortening of time, and a more attractive course. We are in a war effort, trying to rush the present students through so they may add their efforts to those of the older and experienced men, whose numbers we are finding are already lamentably short. In proportion to our population, we have more doctors of medicine than any other nation on earth but our army needs are greater than the civilian needs by ten to one,* and immeasurably more than the armies of the other nations. We have become accustomed to the best medical care there is for the least of our people, and are demanding better for our soldiers. There are not now enough medical men to go around. Only by our "home front" physicians going double and triple time can the civilian population receive necessary medical care.

If medical students are shoved forward and none prepared to take their places in a very few short years there will be a time of no additions to the medical ranks. In fact that time is "just around the corner." Some one must devote time now to this problem and a solution must be found. We are a "profession" of knowledge, of training, of ability to think, and with the trained brains that can think. This challenge has been called up by the war, and our efforts the past year to help by consenting to a telescoped course, not a shortened one, have hastened the time when this challenge must be met.

The challenge may be restated: First, have we crowded too much into too little time, without consideration of relaxation, and thus risked stunting the keenness of the high-strung medical student; secondly, is there not a way, by eliminating or shortening some less essential courses, and offering some relaxation as needed, to still produce as good or better doctors? A third question naturally follows: How will we recruit the ranks and keep an even number of new graduates flowing into the practice of medicine to replace losses by death and retirement, with the collegiate young men of eighteen to twenty being subject to the draft, and no exemptions provided for prospective medical students?

Doctor, think it over.

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*In the Army, one M.D. to each 143 soldiers and in civilian life, one M.D. to each 1,500 persons.

✶ YOU AND YOUR BUSINESS ✶

1942 INCOME TAX LAW

The Revenue Act of 1942 as it applies to Doctors of Medicine will be the subject of a detailed article in *The Journal of the American Medical Association* in January. Watch for this article which will give you a complete analysis of the latest and very complicated U. S. Revenue Act. Physicians with considerable incomes to report will do well to utilize the services of an attorney accredited to appear before the Treasury Department.

The new law remedies the unjust method of taxation that has heretofore prevailed in connection with the uncollected accounts on the books of a taxpayer at the time of death. Hereafter the value of such accounts will not be added to the income of the taxpayer for the year of death. This change will result in a considerable saving to the estates of physicians.

A new provision authorizes a taxpayer to deduct amounts expended for medical, dental, and hospital care, *including amounts paid for accident and health insurance,* according to a prescribed formula. Deductions will be permitted to the extent that such expenses exceed five per cent of the net income of the taxpayer but not in excess of $2,500 in case of the head of a family, or $1,250 in case of other individual taxpayers.

Another provision of interest to physicians who employ other persons (such employments being within the coverage of the Social Security Act) *freezes the tax at one per cent for the year 1943,* thus preventing an automatic increase to two per cent as provided in the Social Security Act.

The new law makes no changes with respect to the expenses a physician may deduct in connection with his professional work.

GAS RATIONING

Each passenger car is entitled to a basic ration or "A" book good for 240 miles per month (150 miles for essential occupational use and 90 miles for home necessity use—but no pleasure driving).

The B books are good up to 470 miles per month.

The C books are from 471 miles to no maximum.

Both the B and C books, good for 3 months, are tailored to essential professional or occupational needs.

Tires must be inspected at a designated station on a specific date (January 31, 1943) and every 60 days thereafter for cars having B or C books.

SNOW TIRES

The Office of Price Administration has denied physicians who practice in areas where deep snows prevail their request to retain special automobile equipment—mud or snow passenger tires—that will enable them to negotiate the winter's snow-covered and muddy roads. Physicians in the Upper Peninsula and in the upper portion of the Lower Peninsula of Michigan feel that unless they are permitted to keep and utilize such winter equipment now in their possession, it will not be possible for them to give prompt service to patients who depend on them for medical care during the months of December, January, February and March.

Approximately 1,400 Michigan physicians have enlisted in the Army and Navy, and our Doctors of Medicine on the home front have three times more work to do than formerly. It is imperative, in the interests of the health and welfare of the patients to be served in the snowbound territory of Michigan that federal regulations covering the use of snow and mud tires be changed. Otherwise, the people will suffer because an important part of a doctor's equipment for the efficient practice of medicine will have been taken from him.

Up to date, OPA has been adamant in this ruling.

All efforts should be made to have this regulation of the Office of Price Administration amended. Individual physicians affected by this ruling have been urged to take prompt action in seeking the aid of their Representatives in Congress to secure necessary amendments to the federal regulation covering the use of snow and mud tires.

"DRAINING THE STATE DRY OF DOCTORS"

The following letter was addressed to the Surgeons General of the Army, the Navy, the Air Forces, United States Public Health Service, and to the Procurement & Assignment Service of the War Manpower Commission:

The Medical Department Officer Recruiting Board of Michigan was instructed to "drain the state dry of doctors of medicine", and performed this work most efficiently in face of the fact that thousands upon thousands of new war workers were and are coming to Michigan from other states.

Despite the fact that Michigan has passed its medical recruiting quota by several hundreds (103%), physicians continue to leave for the armed services from areas where they are vitally needed to protect the health of civilians, agriculturists and those working in industry.

The situation is becoming so acute, particularly in those areas where war industries are working day and night, that something must be done to stem the tide or else all agencies concerned will feel the effect of an aroused public opinion and will be severely criticized for any epidemic that may occur in this state.

It is only reasonable to request that the number of civilian physicians in Michigan which already has been greatly reduced by the high percentage of enlistments, should not be further pared—and that physicians in farming country and in those industrial areas of Michigan to which new war workers have come by the thousands should not be made available for service in the armed forces, despite their patriotism and desire to enlist.

Civilian and industrial health protection in Michigan

indicates definitely that a further drain on our medical manpower is most inadvisable. Those doctors of medicine who now remain on the home front will be able, by working twice as hard as in the past, to carry on necessary medical services for our people. No importation of physicians from other states will be required or is desired. However, a further reduction in the number of Michigan practitioners may well be dangerous to the health and welfare of the people of this state.

We thank you for giving this communication serious consideration, and would appreciate your opinion and advice.

Very respectfully yours,
Committee of The Council
Michigan State Medical Society

L. FERNALD FOSTER, M.D., *Chairman*
P. L. LEDWIDGE, M.D.,
V. M. MOORE, M.D.

November 11, 1942.

TEMPORARY LICENSES FOR REFUGEE PHYSICIANS?

At the recent Chicago Midwest Regional Conference (of 11 states) of the Council of State Governments, a recommendation was presented that out-of-state doctors of medicine and dentists be granted a temporary license in each of the eleven states in the Midwest Regional Conference.

One of the Michigan representatives, a member of Michigan's Committee on Interstate Coöperation, authorized by the 1941 Legislature, objected strenuously to this proposal to unload an oversupply of refugee physicians on the Middle Western states. He stated that such a proposal, in the guise of a war-time necessity, would lower the standard of medical practice in Michigan by admitting poorly-trained practitioners to this state via a "temporary license."

All State Boards of Medical Examiners of the United States, as well as the Federation of State Medical Boards of the United States, have been informed of this movement so that the members thereof may make contact with representatives to other regional conferences of the Council of State Governments, prior to their being called, in order to avert any unfortunate action on the part of uninformed representatives who might quickly approve such a recommendation.

FEDERAL SOCIAL INSURANCE CONTRIBUTION ACT

A bill to translate into federal legislation the President's recommendations that the Social Security Act be amended to extend benefits and to add payments for hospitalization was introduced by Representative Eliot on September 9, 1942 (H.R. 7534).

The major changes in the Social Security Act contemplated by this bill are as follows:

1. *Extend Social Security to New Groups.*

Extension of the Social Security Act to essentially all employed persons; the new groups being agricultural labor, domestic service, employes of nonprofit institutions, fishermen, insurance agents, etc.

2. *Benefits for Permanent Disability—and Rehabilitation.*

In addition to old age pensions, provision is made for "total and permanent" disability for work by reason of illness or injury. The amount of the old age pension or the permanent disability benefit may range upwards to $85.00 per month.

An initial fund not to exceed $400,000 (thereafter 2 per cent of the total amount expended for disability benefits) is established to furnish medical and surgical services for the rehabilitation of persons receiving the disability benefits.

3. *Federalization of Unemployment Compensation.*

Federalization of the unemployment compensation program now administered by several states.

4. *A Federal Sickness Benefit Program.*

Establishment of a federalized temporary disability benefit program which will provide benefits for unemployed because of illness or injury. Eligibility for sickness benefits to be determined by an authorized physician or "expert."

The amount of the weekly benefit for temporary disability, which is the same as the benefit for unemployment compensation, may range from $5.00 to $23.00 per week, depending on the quarterly earnings and the number of dependents.

In addition to disability benefits, each woman is entitled to a weekly maternity benefit equal to the weekly disability benefit, which payment is to commence six weeks prior to her confinement.

5. *A Federal Hospitalization Benefit Program.*

Establishment of a federal hospitalization benefit program paying $3.00 to $6.00 for each day of hospitalization for both the insured workers and their dependents.

To administer this program, a National Advisory Hospital Benefits Council is established and authorization is given for the contracting with hospitals or other agencies or institutions for the provision of the services (that is, the insured person will assign his hospitalization benefits to such hospital or agency in return for the provision of the hospitalization services).

The services to be included in a "day of hospitalization" are not specified. However, an "accredited hospital" is defined as an institution providing at least bed and board, general nursing care, use of the operating room or delivery room, ordinary medications, dressings, laboratory and x-ray services.

6. *Increased Contributions for Social Insurance.*

The contribution from the employer and employe to carry the extended program is increased to 5 per cent for the employer and 5 per cent for the employe for those previously insured under the Social Security Act, 4 per cent for self-employed persons, and 2 per cent by the employer and 2 per cent by the employe in agricultural labor, domestic service, nonprofit institutions, etc., to be collected on all wages, commissions, salaries, etc., up to $3,000 annually for each employe. After 1945 the total contribution will be increased by another 1 per cent.

Your Friends

■ Every month during 1942 the following advertisers carried their friendly message to the medical profession of Michigan through the pages of THE JOURNAL:

Barry Allergy Laboratory, Detroit, Mich.
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Other advertisers who placed their message regularly in THE JOURNAL included:

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MICHIGAN'S DEPARTMENT OF HEALTH

H. ALLEN MOYER, M.D., Commissioner, Lansing, Michigan

TRAVELING DENTAL OFFICE WILL VISIT SCHOOLS

A traveling dental office is the Michigan Department of Health's latest contribution to Michigan's program of preparing 18 and 19-year-old youths for military service.

A 24-foot trailer housing complete dental equipment and x-ray camera, first unit of the kind to be placed in use in any state to supply dental services to youths in high schools, is to visit areas where need is greatest because local dentists have been called to the colors.

The age group represents the high peak in accumulation of dental defects. The armed services are rejecting candidates who have poor teeth.

High schools in industrial areas of the state will probably be among the first to be visited by the traveling unit. The Children's Fund of Michigan is conducting a survey in upper peninsula counties to find areas where need of such services is most serious.

Proposed use has been endorsed by the council of the Michigan State Dental Society.

The traveling dental office is the third mobile unit to be placed in service by the Department, a state laboratory trailer and a bus carrying an x-ray camera used in examinations for tuberculosis already having been commissioned.

MICHIGAN BIRTHS EXPECTED TO REACH ALL-TIME HIGH

Michigan's births this year will reach 121,000 —an all-time high—on the basis of figures tabulated for the first seven months by the Michigan Department of Health.

An expected 53,000-odd deaths this year will leave Michigan's population total some 68,000 to the good, counting births only and without a census of the thousands drawn here by war industry.

The total of births will represent a gain of 14,000 over the 107,000 births reported in 1941.

Michigan's 1941 birth rate of 20.07 exceeded the nation's averaged rate of 19 per 1,000 population.

Records of Michigan births during the last two years do not support the premise that more male than female infants are born in war years, the Michigan rate continuing to hold constant at 106 males to 100 females. Greater mortality among male infants helps to even the count.

DISTRIBUTION OF PLASMA ADVANCED TO JANUARY 1

Due to the difficulty encountered in obtaining blood plasma equipment, and because of the lack of personnel, the approximate date for blood plasma distribution has been advanced to January 1.

It has been necessary to redesign equipment because of changes in War Production Board regulations and inasmuch as rubber is a necessary part of the equipment, delays must be expected in the production and distribution of the plasma on a state-wide basis.

Plasma will be processed in the laboratories of the Michigan Department of Health.

TOURIST INDUSTRY FINDS THAT SANITATION PAYS

Number of "sanitation approved" signs furnished to Michigan's tourist industry by the state health department has more than doubled in the last three seasons, proof that resort owners find it pays to offer the kind of accommodations that can pass rigid inspection.

Resorts approved last summer totaled 580 as compared with the 262 which were furnished signs in 1940. Approved cabin camps jumped to 456 this year from 180 two years ago.

Inspectors from state and local health departments visit cabin camps, cottage camps, summer resort hotels, children's camps, state, county and township parks and amusement resorts. Number of cabin camps again showed an increase this year, the classification now representing 63.5 per cent of all resorts. The percentage was 53 in 1940.

War requirements cut into the supply of qualified inspectors last summer and roadside inspections of water supplies of gas stations, restaurants, parks, dairy bars and so forth were limited to counties having full-time health departments.

Signs designating approved water supplies were furnished 44 per cent of these roadside stands this year, as compared with 26 per cent in 1940.

ANNUAL COUNTY SECRETARIES' CONFERENCE

January 24, 1943—Lansing

Olds Hotel, 10 A.M. to 4 P.M.

Tentative Program

Morning

1. The Rationing Program as it Affects Physicians—Edward T. Broadwell, Rationing Director, OPA, Detroit, Michigan.
2. Any Spies in Michigan?—Captain Harold Mulbar, Michigan State Police, East Lansing, Michigan.
3. Physicians' Income Tax for 1942—J. W. Holloway, Jr., Bureau of Legal Medicine, American Medical Association, Chicago, Illinois.
4. Facts For the Physician—L. Fernald Foster, M.D., Michigan State Medical Society, Bay City, Michigan.

Question and Answer Period

Cocktails and Noonday Dinner

5. Greetings from—Harry F. Kelly, Governor.
6. How the Medical Profession Can Meet Military, Industrial, Research, and Civilian Needs During Wartime—Lt. Comm. M. E. Lapham, USN, Procurement and Assignment Service, Washington, D. C.

Afternoon

7. "Temporary Licenses" and Dislocating of Physicians—Earl W. Munshaw, LL.B., State Senator, Grand Rapids, Michigan.
8. Group Disability Insurance for Physicians—Eric Nissen, Insurance Councilor, Detroit, Michigan.

Question and Answer Period

Practice of Medicine by Hospitals: The A.M.A. Board of Trustees recently appointed a committee of three to study the matter of hospital corporations engaging in the practice of medicine and of the improvement of the relations between physicians and insurance companies.

* * *

Capt. J. E. Clifford, M.C., 44th Hospital Train, Camp Gruber, Oklahoma, writes: "I really appreciate receiving the Michigan State Medical Society Journal, out here in the wilds of Oklahoma. It is like money from home. Many thanks, again, and keep 'em coming."

* * *

Lawrence Reynolds, M.D., Detroit, presented the Henry K. Pancoast Memorial Lecture before the Philadelphia Roentgen Ray Society and the Philadelphia College of Physicians, Thursday evening, November 5. This was the second Pancoast Lecture.

COUNTY AND PERSONAL ACTIVITIES

"No great deed is done by falterers who ask for certainty."—GEORGE ELIOT.

* * *

The Highland Park Physicians Club has decided to suspend its annual clinic for the duration, because of difficulties arising out of the present emergency.

* * *

Always interesting and ofttimes amusing reading is found in "Michigan Medical Memoirs," published by the Editor in the *Bulletin of the Jackson County Medical Society.*

* * *

"Each doctor should be very careful of his or her own health" states O. M. Randall, M.D., president of the Ingham County Medical Society in the *Ingham Bulletin.*

* * *

O. D. Stryker, M.D., of Fremont, was appointed as Councilor of the 11th District to take the place of Roy Herbert Holmes, M.D., who resigned to enter the armed forces as a Major in the Air Corps.

* * *

The Michigan State Board of Registration in Medicine, on November 2 advised that the medical license of John Durwood Bradford of Portland, Michigan, was revoked.

* * *

Locum Tenens: Anyone interested in securing a locum tenens for the month of December please contact the Michigan State Medical Society, 2020 Olds Tower, Lansing, Michigan, Phone 5-7125.

* * *

The History of the Washtenaw County Medical Society, written by John A. Wessinger, M.D., is being published in serial form in the *Bulletin of the Washtenaw County Medical Society.* The articles are as interesting as a fictional novel.

* * *

R. J. Himmelberger, M.D., of Lansing, Michigan, has resigned as Secretary of the Ingham County Medical Society to enter service in the armed forces. F. Mansel Dunn, M.D., 301 N. Seymour Street, Lansing, is the new Secretary.

* * *

Mark Marshall, M.D., and R. Wallace Teed, M.D., Ann Arbor, are authors of an article under "Clinical Notes" in *Journal of the American Medical Association* of October 17, 1942, entitled "Torula Histolytica Meningoencephalitis."

"A medical problem your doctor seldom talks about —one of his most perplexing problems" is the title of a leaflet referring to the physicians' lack of time. This is reprinted from an advertisement published by Parke, Davis and Company, Detroit. The leaflets are available to individual physicians or county medical societies.

* * *

The Statler Hotel, Detroit, will be the scene of the 1943 Postgraduate Conference on War Medicine—the 78th annual meeting of the Michigan State Medical Society—on Wednesday, Thursday and Friday, September 22, 23, 24, 1943.

* * *

The Basic Science Board will hold its next examination in Detroit and Ann Arbor simultaneously, on February 12-13, 1943. Applications may be obtained by writing the Basic Science Board, Walnut Street, Lansing, Michigan.

* * *

The Annual County Secretaries' Conference will be held at the Olds Hotel, Lansing, Sunday, January 24, 1943, 10 a.m. to 4 p.m. All members are invited to attend this meeting. An intensely interesting and practical program is being developed. (See Page 1069.)

* * *

Roster of Military Members. The February, 1943 MSMS JOURNAL will contain a roster of Michigan's military members. Lists are being developed by the county society secretaries, for certification to the State Society as of December 15, 1942.

Written Examinations by the American Board of Obstetrics and Gynecology will be held on February 13, 1943. The oral-clinical and pathological examinations are scheduled for Pittsburgh from May 19 to May 25, 1943, according to Paul Titus, M.D., 1015 Highland Building, Pittsburgh.

* * *

Wm. A. Repp, M.D., was the guest of honor at a reception and dinner on November 7 in the Statler Hotel, Detroit, celebrating his golden anniversary in the practice of medicine and his long association with St. Mary's Hospital, Detroit. Over 200 physicians and their wives attended this testimonial to Dr. Repp.

* * *

Robert L. Dixon, M.D., until 1937 Superintendent of the Lapeer Home and Training School and since then Superintendent of Caro State Hospital, has been appointed Acting Superintendent of the Lapeer State Home & Training School, replacing Fred R. Hanna, M.D., who died recently.

* * *

Enforcement of State Trailer Camp Regulations was legally upheld by Circuit Judge George W. Sample of Ann Arbor who recently dismissed an injunction which restrained officials from prosecuting a trailer camp operator on a charge of operating his camp without a license which the county had refused to grant because of unhealthy sanitary conditions in the camp. Judge Sample found that the health authorities had "done no more than to perform well the duties imposed upon them by statute."

The Genesee County Medical Bulletin of October 13 was dedicated to J. W. Handy, M.D., Emeritus Member of the Michigan State Medical Society, who recently passed his ninetieth birthday. Dr. Handy was graduated from the University of Michigan Medical School in 1884 and has been practicing in Flint since 1885.

* * *

The Kalamazoo Academy of Medicine has appointed a special committee on Publicity and Public Relations to consider matters relative to the relation of the profession and the public in the present emergency. Ralph G. Cook, M.D., R. J. Hubbell, M.D., and William G. Hoebke, M.D., are members of this important committee.

* * *

"Nutrition in Everyday Practice" by Frederick F. Gistall, M.D., of Toronto was the fourth in a series of talks on "Nutrition in Medicine, Dentistry and Industry." This talk in the Art Institute, Detroit, on December 14, was under the auspices of the Wayne County Medical Society and the Detroit Pediatric Society.

* * *

J. Lyndon Leet, Assistant Executive Secretary of the Michigan State Medical Society for the past seven years, was commissioned a First Lieutenant in the Medical Administrative Corps and left Lansing for O'Reilly General Hospital, Springfield, Missouri, on October 12. Lieutenant Leet will be assigned to the 36th General Hospital (Wayne University College of Medicine Unit) when it is activated.

* * *

Syphilis cases show a marked increase over the number reported last year but much of this increase is undoubtedly due to better or more effective case finding methods. Donating of blood for the blood bank, selective service, industrial and premarital blood tests have accounted for the discovery of many cases hitherto unrecognized.—From *Oakland County Bulletin,* November, 1942.

* * *

"It is all too evident that many physicians are not making a vaginal examination in their premarital examinations," states the Editor of the *Oakland County Bulletin.* "The law is quite specific about this examination. . . . If you do not carry out the intent and purpose of this law you are negligent in your duty and are bringing discredit upon your profession."

This timely editorial appears in the October, 1942, *Bulletin.*

* * *

Udo J. Wile, M.D., of Ann Arbor has been commissioned Medical Director (R) in the U. S. Public Health Service for active duty with the Division of Venereal Disease Control. Dr. Wile will conduct a study of all new methods described in recent years by various clinics for the intensive treatment of syphilis, and will also supervise the quarantine hospitals which the Public Health Service and the states are developing in a number of critical war areas.

Wm. H. Alexander, M.D. of Iron Mountain is President and L. E. Coffin, M.D. of Painesdale, is President-elect of the Upper Peninsula Medical Society. The next meeting will be held in Iron Mountain in July, 1943. The Secretary of the U. P. Medical Society is the Secretary of the county medical society of the host city. The present Secretary of Dickinson-Iron County Medical Society is E. B. Andersen, M.D. of Iron Mountain.

* * *

Kalamazoo's remaining sixty-three doctors have set up a professional "dog-watch" system to assure twenty-four-hour emergency medical and surgical care. Physicians and surgeons, serving in rotation, will keep an all-night vigil at one of the two local hospitals, and patients will be given necessary treatment by these practitioners in emergency cases until their family physicians can be contacted. A committee of the Kalamazoo Academy of Medicine originated and introduced the plan.

* * *

Distance Involved in Pacific Area. The September 21, 1942, *Newsmap,* distributed by Army Orientation Course shows distance (nautical miles—one nautical mile equal to 1.15 statute mile) from San Francisco to Solomon Islands, 5,166 miles; to Sydney, Australia, 6,531 miles; to Auckland, New Zealand, 5,932 miles; from New York to Dakar, 3,629 miles; to Capetown, 6,786 miles; to Bombay, 11,356 miles, and to Calcutta, 12,247. What vast distances over which to move men, military supplies and food!

* * *

More About the 1942 MSMS Annual Meeting

W. D. Gatch, M.D., Indianapolis: "I wish to congratulate you on the very fine meeting you arranged at Grand Rapids."

Lawrence Reynolds, M.D., Detroit, Radiology, Pathology, Anesthesia Discussion Conference Leader: "I believe that this is a well worthwhile conference and should develop into a very instructive part of the annual meeting. Our conference was very well attended."

* * *

Disposition of Narcotics by Physicians Entering the Armed Forces: The Bureau of Narcotics advises that any narcotics on hand in unbroken packages may be returned to the person from whom obtained, pursuant to an official order form; or they may be sold to another registrant under the Narcotic Laws provided that specific authority has been obtained from the Collector of Internal Revenue to transfer or sell the drugs pursuant to official order form; or the drugs may be surrendered voluntarily to the local office of the Bureau of Narcotics, Federal Building, Detroit, Cherry 9330, Extension 580.

* * *

The Tuscola County Medical Society honored its Past Presidents at its October meeting, presenting the following physicians with Past President's keys: George Bates, M.D.; Frank L. Morris, M.D.; Robert L. Dixon, M.D.; J. G. Maurer, M.D.; O. G. Johnson, M.D.; Annie

S. Rundell, M.D.; Harry A. Barbour, M.D.; Lloyd L. Savage, M.D.; Bernard Starmann, M.D., and R. R. Howlett, M.D. The meeting was preceded by a dinner at the Montague Hotel at Caro and was presided over by E. C. Swanson, M.D., President. MSMS Councilor W. E. Barstow, M.D., of St. Louis, made the presentation of the gold key charms.

* * *

A proposed consultation service for military rejectees in Hamilton County, Ohio, has been prepared, to be conducted experimentally under the joint auspices of the Cincinnati Board of Health and Public Health Federation. The plan aims to contact the rejectees, ascertain the cause of rejection, and help advise them as to remedial procedures. The proposal contemplates the possibility that if the service proves valuable it may later be taken over and continued by the Ohio Selective Service. An Advisory Committee, with medical representation, will determine all policies for the service.

* * *

V. L. VanDuzen, M.D., formerly of Belding, has been appointed as Coördinator for the Crippled Children Commission in charge of its Grand Rapids office, located at 303 Loraine Building.

Dr. VanDuzen was in the private practice of medicine in Detroit and more recently in Belding before becoming associated with the Crippled Children Commission, six months ago.

Dr. VanDuzen is the fourth coördinator appointed by the Commission, the others being David Kliger, M.D., Detroit; W. G. Hutchinson, M.D., Oakland County; A. H. Miller, M.D., Upper Peninsula.

* * *

Your Friends

Cameron Heartometer Company, Chicago, Illinois
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Davis & Geck, Inc., Brooklyn, New York
DePuy Manufacturing Company, Warsaw, Indiana
Detroit Creamery Company, Detroit, Michigan

The above ten firms were among the exhibitors at the 1942 MSMS annual meeting in Grand Rapids and helped make possible for your enjoyment one of the oustanding state medical meetings in the country. Remember your friends when you have need of equipment, medical supplies, appliances or services.

* * *

Course in Occupational Dermatoses

A combined lecture and demonstration course in Occupational Dermatoses will be conducted in Chicago, beginning January 11, 1943, by Dr. Louis Schwartz, Chief of the Dermatoses Investigations Section of the U. S. Public Health Service of Bethesda, Maryland. The teaching period will cover two weeks, the first of which will be devoted to lectures and demonstrations, and the second to plant visits. Dermatologists, industrial physicians and others interested in the course should communicate with Dr. Edward A. Oliver, 55 East Washington Street, Chicago, Illinois.

No limit will be placed upon enrollment for the lec-

tures, but the visits to the plants will be limited to twenty-four enrollees. No fees will be charged.

The Fifth Annual Forum on Allergy

This international postgraduate society will meet in the Hotel Statler in Cleveland, Ohio, the week end of January 9 and 10, 1943. This Forum will offer in most intensive presentation both the new and the old in allergy. The meeting will be characterized by its use of all the various types of instruction. Formal lectures, special talks, dry clinics, study groups, moving pictures, kodachromes, panel discussions, ending with an "Information On Allergy, Please," will all be used to teach the physicians of the United States and Canada. Not only will specialists in this new field of internal medicine gather, but also those whose interests are in allied fields of medicine will be welcome, for in wartime every physician is called upon to advise and treat allergic patients. This is especially true of those in internal medicine, diseases of children, diseases of the skin, diseases of the eye, diseases of the nose and throat, as well as those engaged in basic research in immunology. A course in immunology as it applies to allergy will be given the week before by Dr. Eckers to a limited number of physicians and associates. Any physician interested in either or both of the foregoing is invited to write Dr. Jonathan Forman, 956 Bryden Road, Columbus, Ohio, for copies of the printed program and registration blanks.

Among the fifty-eight allergists participating in the program are most of the leaders in this field, including Stanley Insley, M.D., Sam Levine, M.D., George Waldbott, M.D., all of Detroit. Arthur Coca, M.D., of New York will receive the Forum's Gold Medal and will give the annual Forum Lecture, on Sunday afternoon.

TRANSFUSIONS VIA BONE MARROW

When the administration of blood and other fluids directly into the general circulation is indicated, and when for any reason, suitable veins for injection are not available, the solution can be infused via the red bone marrow. Substances so injected are taken up immediately into the venous circulation unchanged.

To date, the procedure for the administration of parenteral fluids has been used 116 times in 90 patients. Fifty-two of these individuals were adults and 38 were children under 10 years of age. These experiences have convinced us of the utility and safety of the method, if employed properly, when indicated, and with due regard for the necessary precautions. In most patients receiving fluids by this technique, the need for rapid administration was not great, but administration directly into the circulation was required, and the veins, for one or another reason, could not be used. The incidence of local or constitutional reactions following this form of therapy, has, in our experience, been low.—JAMES F. O'NEAL, M.D., et al., *N. Car. Med. Jour.*, (Sept.) 1942.

IN MEMORIAM

DIED IN SERVICE

Lieutenant John D. Reid of Ironwood was born in 1909, and was graduated from the University School of Medicine in 1935. He was a popular young physician, well known throughout the range as an active member of civic and fraternal groups and as the attending doctor for the Ironwood high school athletic teams. He was killed in an automobile accident near Camp McCoy, Wisconsin, on October 27, 1942.

Fred R. Hanna of Lapeer, was born in 1900 in Detroit, and was graduated from the Detroit College of Medicine in 1931. After graduation he practiced at Reed City, and served as assistant medical director of Oakland County before his appointment as Superintendent of the Lapeer State Home and Training school in 1933. Doctor Hanna was a member of the American Psychiatric society and many civic organizations of Lapeer.

He died following a heart attack on October 27, 1942.

George A. Holliday of Traverse City, was born in 1867 in Myrtle, Ontario, and was graduated from the University of Michigan School of Dentistry and returned to Traverse City where he engaged in practice for thirteen years when he entered the Detroit College of Medicine, graduating in 1904. In 1904 Doctor Holliday entered medical practice in Traverse City and continued until 1917, when he was called into active service with the Navy Reserve unit. He later was transferred to the Army Medical corps with the rank of Major and served as a transport surgeon until eighteen months after the Armistice when he resumed his local practice. Doctor Holliday was health officer of Traverse City for a quarter of a century, continuing in this work until the local health unit was organized a few years ago. He died October 30, 1942.

The instance of syphilis in patients with cancer of the mouth has been reported to be as high as 35 per cent as compared to 5 per cent in the general population. Syphilis in the absence of a mouth tumor deserves thorough treatment, but the finding of a positive Wassermann with a mouth lesion means little, as far as the lesion is concerned. The important thing is to prove whether or not the lesion is due to cancer.

The most important lesion occurring in the mouth is cancer, and the only way to rule it out is by repeated negative biopsies. A sore in the mouth should never be treated for syphilis or granuloma until cancer is ruled out. Any large lymph nodes in the neck usually represent cancer from the mouth in the adult, and a thorough search of the mouth should be carried out before ill-advised surgical removal or treatment by irradiation methods is instituted.—J. ELLIOTT SCARBOROUGH, JR., M.D., *Jour. Med. Assn. Ga.*, (Sept.) 1942.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us as a full compensation of those sending them. A selection will be made for review, as expedient.

AFTER-EFFECTS OF BRAIN INJURIES IN WAR. Their Evaluation and Treatment, The Application of Psychologic Methods in the Clinic. By Kurt Goldstein, Clinical Professor of Neurology, Tufts Medical School, New York; Grune & Stratton, 1942. Price, $4.00.

During the last war the percentage of deaths shortly after brain injuries was extremely large. Most common were injuries from gunshot and shrapnel, those from aerial bombings were rare. This study is based upon observation of about 2,000 cases, and analyzes the symptoms such as disturbances to the vasomotor system, diffuse or circumscribed, disturbances of general function, sugar metabolism, epilepsy, neurological symptoms, disturbances of function, lesions of the visual area, with many tests, disturbances of space function, color vision, constriction of the fields. Mental symptoms are studied and classified as to their bearing. Lesions in various parts of the brain produce specific alterations of function. Many cases are quoted to illustrate this point, and to show the methods of treatment, which ones may be rehabilitated, and which must be prepared for some life entirely different from his previous one. A most interesting book, and one that may answer many questions about patients injured other than in war. The brain-injured soldier will impose a problem on many of us after the war, and this book gives many of the answers, and procedures of treatment.

DAILY LOG FOR PHYSICIANS. A Brief, Simple, Accurate Financial Record for the Physician's Desk. Champaign, Ill.: Colwell Publishing Co., 1943. Price, $6.00.

Dr. Colwell's Daily Log is a loose leaf type of book with a page for each day and additional pages at the end of each month for complete record of office and other expenses; also a summary of receipts, charges, and operations and obstetric records. With the present income tax requirements, something of this nature is almost indispensable. This is handy, and in a form to be filed each year for reference. It could also be used as an appointment book and day book combined.

THE MIND AND ITS DISORDERS. By James N. Brawner, M.D., Medical Superintendent, Brawner's Sanitarium, Smyrna, Ga. Atlanta, Ga.: Walter W. Brown Publishing Co., 1942. Price, cloth, $3.50.

This book is written for the use of the general practitioner of medicine who has a small knowledge of psychiatry, and, so far as possible, is presented in language understandable by the men who must look after the medical needs of the larger percentage of patients suffering from mental disease. At first a few necessary terms and their definitions are given. The symptoms most commonly present are freely discussed, then mental states are considered. There is a classification of mental disorders appended. The book is readable and will be very helpful to the man who first sees these patients, and who in many instances will be the sole attendant.

THE VERTEBRATE EYE AND ITS ADAPTIVE RADIATION. By Gordon Lynn Wallis, Research Associate in Ophthalmology, Wayne University College of Medicine. Cranbrook Institute of Science, Bulletin No. 19, August 1942. Bloomfield Hills, Michigan: The Cranbrook Press, 1942.

This book is a research in our own state representing an endless amount of work and detail. It is a serial presentation of the sense of light that later becomes the sense of vision. The book of 785 pages is so arranged that the discussion of any given study will be perfectly understood if as the author says "the reader has not skipped too much before it." Subsequent studies and expositions are built from what precedes. The book is a challenge, but a serious study, and to men interested in ophthalmology opens up a vast storehouse of facts, with an analysis of reasons and deductions. The book is profusely illustrated and well indexed. It is a complete study of the organ of sight in all strata of life. Derivations from lower forms, and differences of the eyes are described, beginning with the lowest forms and functions. The Mammals are last, and are of three orders, the monotreme, the marsupial and the placentalian. The histological study, and development of function and visual adaptation make interesting reading. For the student of the physiology, anatomy and comparative analysis of ophthalmology this book is a gold mine.

PRINCIPLES OF EXTRAPERITONEAL CESAREAN SECTION. By James V. Ricci, Associate Clinical Professor of Gynecology and Obstetrics, New York Medical College, and James Pratt Marr, Associate Attending Surgeon, Woman's Hospital of the State of New York. Philadelphia: P. Blakiston Company, 1942. Price, $4.50.

This book is an argument for the extraperitoneal approach to cesarean section. The old classical operations are out of date, not without danger, and do much damage to delicate muscles and structures in addition to adding the peritoneal cavity to the other points of traumatism or insult. The gynecologist of decades ago missed the opportunity to advance his specialty, and make it all-inclusive, and the obstetrician did the same thing. Now is an opportunity to retrieve much of this field, and make the delivery of women a complete specialty. The book is well written, makes a detailed study of the whole field of cesarean section as practiced today, and gives special attention to the techniques of the various extraperitoneal operations, and especially the Physick-Sellheim operation. The work is well illustrated, forty-seven, and 224 pages. It is a handsome book.

ABDOMINAL AND GENITO-URINARY INJURIES. Prepared under the auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Illustrated. Philadelphia and London: W. B. Saunders Company, 1942.

This is one of the volumes prepared at the request of the rapidly expanding Medical Department of the rapidly expanding Army, under the editorial direction of Dr. Richard M. Hewitt. Abdominal wounds and modern warfare, study and estimation of the status of the patient with known or suspected abdominal injuries, pre-anesthetic preparations, operative procedures are all well explained, illustrated and presented in concise form. The book is valuable in that it brings a host of material into a handy easily consulted volume. The section on genito-urinary injuries is especially well done, profusely illustrated and "do's and don'ts" given.

THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA (THE UNITED STATES PHARMACOPŒIA). Twelfth revision (U. S. P. XII) By Authority of the United State Pharmacopœial Convention meeting at Washington, D. C., May 14 and 15, 1940. Prepared by the Committee of Revision and published by the Board of Trustees. Official from November 1, 1942. Easton, Pa.: Mack Printing Company, 1942. Price, $7.50.

This twelfth revision of the United States Pharmacopœia was undertaken under the chairmanship of E. Fullerton Cook, by authority of the United States Pharmacopœial Convention in Washington, May 14-15, 1940.

Delegates from Michigan represented Detroit Institute of Technology, College of Pharmacy; Michigan State Pharmaceutical Association; Ferris Institute, College of Pharmacy; University of Michigan Medical School, and College of Pharmacy; Wayne University College of Medicine, and College of Pharmacy.

The object is to promote standards for drugs and medicines of sufficient therapeutic usefulness and necessity to use in the United States and its possessions, to express the average dosage, to standardize nomenclature, to give formulæ for the manufacture of pharmaceuticals together with tests and standards.

Lists of articles added to this revision and rejected from the list are given, also changes in names, and corresponding English and Spanish names. This book is complete, gives the recognized remedies, and the standard methods of preparation and dosage.

The sulpha drugs and many vitamins have been added, with complete physical characteristics and formulas.

STANDARD NOMENCLATURE OF DISEASE AND STANDARD NOMENCLATURE OF OPERATIONS. Edited by Edwin P. Jordan, M.D., Chicago: American Medical Association, 1942.

This is a complete revision of the original volume published in 1932. It was developed by a committee appointed by the Board of Trustees of the American Medical Association.

The book is 5 x 7½ inches, flexible leather binding, 1022 pages, on light clear paper. The various sections are thumb indexed. All divisions are Library indexed, the numbers referring to systems, topographical division, etc., and etiology. These numbers are perfect classification involving six figures, each of which has a prearranged meaning.

This standardization of nomenclature would make indexing and classification an exact science, and most valuable in our hospitals.

WAR GASES, Their Identification and Decontamination. By Morris B. Jacobs, Ph.D., Food, Drug and Insecticide Admin. U.S. Dept of Agr. 1927, Chemist Department of Health, City of New York, 1928. Formerly, Lt. U.S. Chemical Warfare Service Headquarters. New York: Interscience Publishers, Inc., 1942. Price: $3.00.

This handsize little book is printed on flat paper, and gives description of all the war gases, especially those of interest in Civilian Defense, with identification tests and methods of avoiding and decontaminating.

It is written largely for use of air raid wardens, gas officers, and all who may come into contact with war gases. And that in this war includes the civilian. Treatment of the individual is not given. The book is a scientific treatise and has assembled a wealth of knowledge and material. It is well indexed.

Reading Notice

CONTINUOUS CAUDAL ANESTHESIA IN OBSTETRICS

A new method for continuous or fractional caudal anesthesia has been developed by Edwards and Hingson (Am. Jour. Surg., 57:459, September, 1942). It appears to be remarkably effective and yet retains the complete coöperation of the patient. There has been uniform absence of delirium, narcosis, cyanosis, nausea, vomiting, and anoxemia, and no interference with uterine contractions. Every infant in the authors' series breathed spontaneously except one stillborn known to have been dead several days before delivery.

The technique consists in the injection of an initial dose of 30 c.c. of 1½ per cent solution of "Metycaine" [Gamma-(2-methyl-piperidino)-propyl Benzoate Hydrochloride, Lilly] followed at thirty or forty-minute intervals with 20 c.c. of the 1½ per cent solution. In every case there has been complete freedom of pain and discomfort of active labor within five minutes following the initial dose. Episiotomy and outlet forceps, and repair of the episiotomy has been without pain. The average duration of anesthesia has ranged from four and three-quarters to thirteen hours.

One patient described was having eclamptic convulsions when admitted, with blood pressure 220/110. After the initial dose of "Metycaine" was given, the pressure declined to 140/90 and the clinical picture improved remarkably. The anesthetic was continued throughout the day without the blood pressure exceeding 150. She delivered a healthy baby spontaneously thirteen hours after the initial dose.

EMERGENCY CARE. By Marie A. Wooders, B.S., R.N., Principal, School of Nursing, Hackensack Hospital, Hackensack, New Jersey, and Donald A. Curtis, M.D., Lieutenant Colonel, Medical Reserve, Commanding 342nd Medical Regiment, United States Army; Instructor in Military Nursing, Hackensack Hospital, Hackensack, New Jersey. 201 illustrations. Philadelphia: F. A. Davis Company, Publishers, 1942.

This is a nurses' teaching textbook. It is profuse in its detail of description. It tells how to do things, what to do and why, and it covers every branch of nursing care looking especially to Emergency care, but it does not give the Medical treatment. There are 201 illustrations, all indexed for ready reference. The book will fill a decidedly valuable place.

WAR MEDICINE, A Symposium. Editor, Winfield Scott Pugh, M.D., Commander, (M.C.) U.S.N. Retired. Formerly Surgeon, City Hospital, New York. Associate editor, Edward Podolsky, M.D.; Technical editor, Dagobert D. Runes, Ph.D. New York: Philosophical Library, 1942. Price: $7.50.

This is a collection of about fifty monographs, some reprinted chiefly from: *The Military Surgeon, The British Medical Journal* and *American Journal of Surgery*. Many other journals are also credited for use of material.

The book is well arranged, well printed and illustrated.

Every conceivable ailment that might impair the soldier's usefulness is discussed and the accepted treatment outlined, from Brain Injury, to chigger and jigger bites, from anesthesia in war circumstances to locations of evacuation hospitals away from railroads. We like this book and its great store of helpful suggestions that will be useful long after this war is ended.

WHEN DOCTORS ARE RATIONED. By Dwight Anderson, Director of Public Relations, Medical Society of the State of New York, and Margaret Baylous, Therapist, Charleston General Hospital, Charleston, W. Va. New York: Coward-McCann, Inc., 1942. Price: $2.00.

This book is a complete exposition of the efforts of organized medicine to survey and set up a method of supplying doctors for the armed forces, and at the same time to keep enough for the care of the civilian population. This is the history of the Procurement and Assignment, as it was supposed to work. The American Medical Association with the state and county societies had a working plan with punchcards for 180,000 doctors, giving all information. This was taken over by the government, and the name changed from Medical Preparedness committee to Procurement and Assignment. The method of selecting doctors for the services needed is set forth, also a chapter on how a private citizen can also select his family doctor, with equal assurance. This book makes a permanent record of the facilities built up by organized medicine, which were ready for the use of the government when the war broke out, and as a part of contemporary history should be in every public library in the country. This book counteracts the propaganda which we are beginning to see from Washington—the need for placing salaried physicians in various localities from which the local physicians have been called to the services.

The germs of *tularemia*, dread rabbit fever, are particularly dangerous, since they can penetrate even healthy human skin.

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Number 12

The JOURNAL

F THE MICHIGAN STATE MEDICAL SOCIETY

The Michigan State Medical Society and The Journal wish you a Merry Christmas and a Happy New Year. This is addressed very especially to the over 1,400 members in Military Service, and their families.

County Secretaries' Conference, Olds Hotel, Lansing, Sunday, January 24, 1943. You are invited.
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1942

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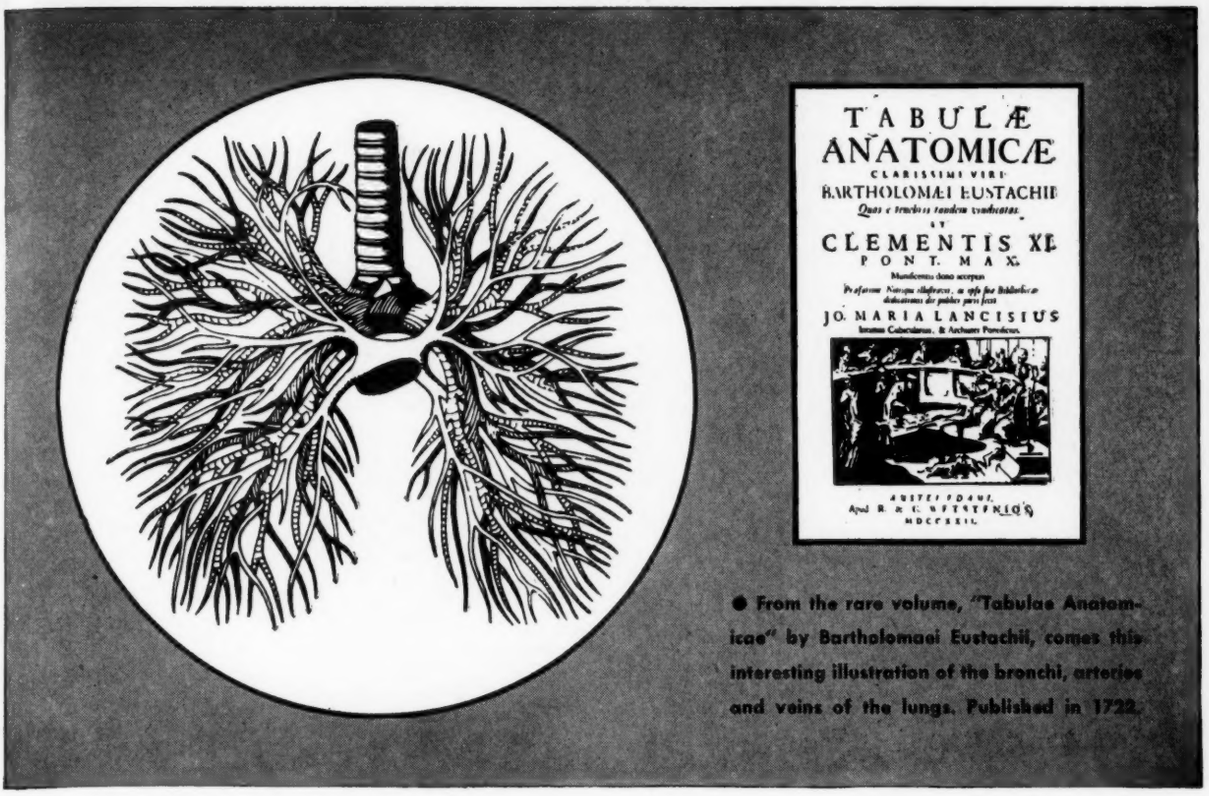

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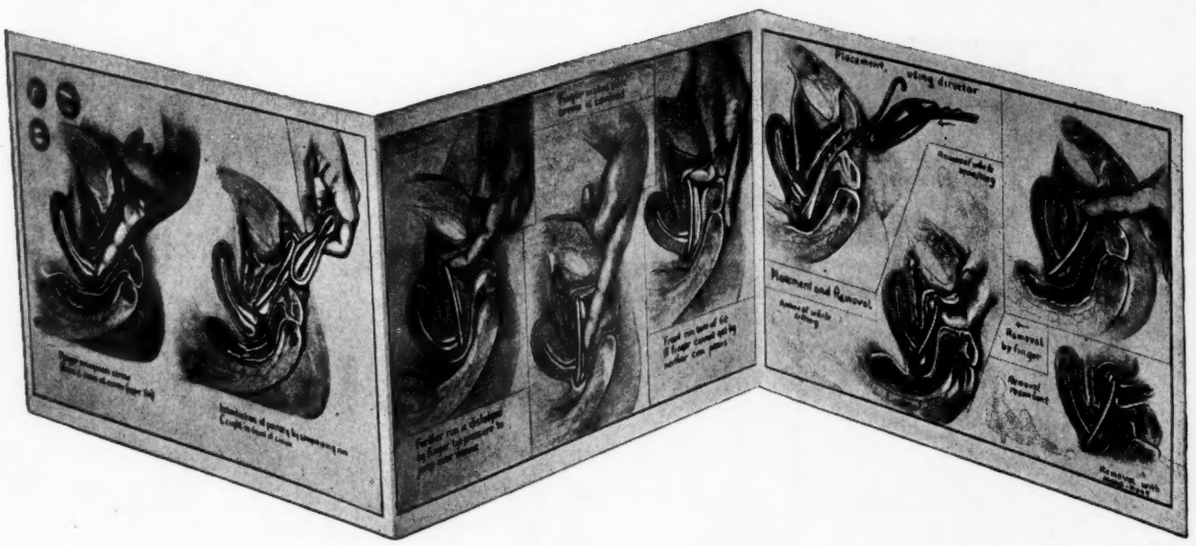

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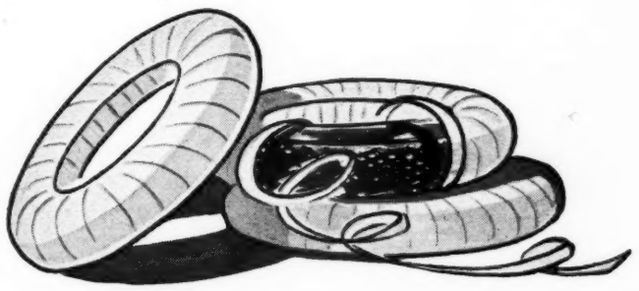

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